

**CITY OF OCEAN SPRINGS
PUBLIC WORKS DEPARTMENT**

**CHECK OFF LIST FOR PRELIMINARY
CONSTRUCTION PLAN REVIEWS**

This form was prepared to assist developers, engineers, contractors and The City of Ocean Springs with construction plan review. It is not a complete list of design requirements, only a starting point during plan review. The Developer's engineer shall complete and submit this check-off sheet along with stamped, signed construction plans clearly marked "Preliminary Plans – Not for Construction". (Last Revised 06/15/15)

Name of Development: _____ Date Submitted: _____
 Approx. Location: _____ Developer's Name: _____
 Developer's Engineer: _____ Developer's Engineer: _____
(Print Name) (Sign Here - PE Seal or Stamp Below)

SEAL/STAMP

**THE FOLLOWING NOTES AND STANDARD DETAILS
MUST BE INCLUDED ON THE PRELIMINARY CONSTRUCTION PLANS**

Shown	Not Shown	Does Not Apply
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GENERAL

NOTES TO BE INCLUDED ON UTILITY PLANS:

- _____ The Ocean Springs Public Works Dept. must be notified a minimum of forty-eight(48) hours prior to any tie-ins to City utilities and a Public Works representative must be present during the tie-in, (228-875-3955).
- _____ The Owner/Developer is responsible for the construction of tie-ins to existing City water, sanitary sewer, storm drain lines or structures.
- _____ The Owner/Developer is responsible for making any approved road cuts or borings required to connect new utilities to existing City utilities. The Developer will be responsible for maintaining road cuts during construction including necessary traffic and warning signage, and the warranty period for the entire development.
- _____ The Owner/Developer is responsible for preparing and maintaining a traffic control plan which conforms to the current MUTCD.
- _____ Ocean Springs Public Works must be notified a minimum of 72 hours prior to any approved road closures, (228-875-3955).

Shown	Not Shown	Does Not Apply
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CHECK OFF ITEMS:

- ___ ___ ___ No storm drainage, water or sanitary sewer infrastructure will be laid parallel with and under any street unless approved by Ocean Springs Public Works.
- ___ ___ ___ Any required wetlands permits must be obtained by the Owner/Developer and a copy of the permit furnished to Ocean Springs Public Works with the plan submittal.
- ___ ___ ___ An MDOT permit must be obtained for proposed work on MDOT right of way and a copy of the permit must be furnished to Ocean Springs Public Works with the plan submittal.
- ___ ___ ___ All water meters, sewer service stub outs and fire hydrants must be placed adjacent to the street side of the right of way line and must be located on lot lines. If it is not possible to place fire hydrants on lot lines, Ocean Springs Public Works must approve the location. Meters, sewer taps, cleanouts, and valve boxes shall not be placed in driveways or sidewalks. Electrical transformers, cables television and telephone pedestals shall not be placed within five (5) feet of the sewer service connection point (we).
- ___ ___ ___ The Owner/Developer must provide a 24 hour accessible phone number for owner, developer, and contractor.
- ___ ___ ___ All lot lines and easements must be marked for final inspection.

WATER

NOTES TO BE INCLUDED ON UTILITY PLANS:

- ___ ___ ___ A "W" is to be stamped into curbs at each water service location.
- ___ ___ ___ A "WV" is to be stamped into curb at each water valve location that is not in the street."
- ___ ___ ___ A locate wire and warning tape shall be installed above all water mains and services. The locate wire shall be continuous. If a joint is necessary in the locate wire, the joint shall be soldered and encased in a water proof enclosure such as a gel pack. The locate wire should be taped directly to the pipe every 3 feet. Extend wire up to the surface of valve boxes and leave an extra 3 feet of wire coiled inside the valve box. Locate wire shall be tested at the end of project for continuity in the presence of an Ocean Springs Public Work's representative. The warning tape should be marked "Water" and installed 18" above the pipe.
- ___ ___ ___ The Owner/Developer shall furnish and install all water meter boxes. The boxes must be made from a composite material and installed flush to the finish grade of the site.
- ___ ___ ___ The Owner/Developer shall purchase water meters to be installed on public right of way from the City of Ocean Springs.
- ___ ___ ___ All water mains shall be a minimum of 6" diameter , AWWA C900, class 150 pipe.

Shown	Not Shown	Does Not Apply
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CHECK OFF ITEMS:

- No 90 degree fittings are allowed on water mains. All fittings will be restrained.
- All water mains shall be pressure tested in accordance with the City requirements.
- The ends of line blow-offs shall be Mueller 2-1/8" post type, see fire hydrant standard detail.
- All water used for chlorination and flushing of water lines shall be metered and paid for by the Owner/Developer.
- Each lot shall be provided with 2 – 1" services (2" tap to 1-1/2" split to 1" split).
- A water service shall be provided to all green areas and lift stations.
- Curb stops shall be 1" x 3/4" swivel type, see attached detail.
- All water line taps must be a minimum of 5 feet from driveways.
- All water main fittings, valves, and fire hydrants must be located and recorded on the record drawings using GPS state plane coordinates.
- All fire hydrants shall be painted yellow.
- The Owner/Developer is responsible for construction of any required meter vault. The meter vault shall be constructed on City right of way and per the attached standard detail. The vault shall have an aluminum, lockable hatch with minimum dimensions of 36" x 36" cast into a removable concrete top.
- Master meters must be purchased from the City of Ocean Springs and paid for in advance of ordering the meter. (Master meters usually take 5 to 6 weeks from order to delivery.)
- The Owner/Developer must furnish a letter of design approval from the Mississippi Department of Health with the plan submittal.
- The size, type and location of existing and proposed water lines must be labeled on all applicable plan sheets.
- The size of water meters and backflow preventers shall be shown on the plans.
- No irrigation meters are to be installed in meter vaults.
- A sufficient number of valves shall be provided for line maintenance and repairs. Valve boxes shall be adjustable, cast iron and tall enough to extend from the valve to the ground surface. The use of PVC risers is not allowed. Concrete collars shall be installed on valve boxes not located in asphalt.

Shown	Not Shown	Does Not Apply
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CHECK OFF ITEMS:

- ___ ___ ___ Backflow preventers shall be installed on city right of way.
- ___ ___ ___ The Owner/Developers shall provide Ocean Springs Public Works a copy of bacterial test results.

SEWER

NOTES TO BE INCLUDED ON UTILITY PLANS:

- ___ ___ ___ An "S" shall be stamped into the curb at each sewer service location.
- ___ ___ ___ A "MH" shall be stamped into the curb at all manhole locations.
- ___ ___ ___ The Owner/Developer shall be responsible for installing mechanical plug(s) in new sewer line(s) at all tie-in manholes. The plug(s) shall not be removed without approval of Ocean Springs Public Works.
- ___ ___ ___ A locate wire and warning tape shall be installed above all sewer mains and services. The locate wires shall be continuous. If a joint is necessary in the locate wire, the joint shall be soldered and encased in a water proof enclosure such as a gel pack. The wire should be taped directly to the pipe every 3 feet. Extend the wire up to surface of manholes in a vertical 2" PVC pipe with a screw on cap and leave an extra 3 feet of wire coiled inside of the pipe. Set top of 2" PVC to same grade as manhole top. The locate wire shall be tested at the end of the project for continuity in the presence of an Ocean Springs Public Work's representative. The warning tape shall be marked "Sewer" and installed 18" above the pipe.
- ___ ___ ___ The Owner/Developer is responsible for constructing manhole tie-in and building inverts.
- ___ ___ ___ All joints in the manhole shall be grouted both inside and outside.
- ___ ___ ___ Tie-ins to existing manholes shall be made by core drilling the manhole with the appropriate size hole for the new pipe. Tie-in manhole must pass vacuum test per City specifications. Tie-in manholes that fail the vacuum test shall be repaired or replaced.
- ___ ___ ___ Sewer service stub-out pipes should be left a minimum of three (3) feet above existing grade and capped.
- ___ ___ ___ Each lot must have an individual, single tie-in to sewer mains.
- ___ ___ ___ The Owner/Developer must provide a 25 1/2" rain tub for each manhole.
- ___ ___ ___ All sewer lines shall be air tested and manholes vacuum tested in accordance with the City requirements and in the presence of an Ocean Springs Public Work's representative.
- ___ ___ ___ If a new sewer line or manhole is modified after being tested and before acceptance by the city, a retest is required.
- ___ ___ ___ All sewer line fittings, services, and manholes shall be located and recorded on the record drawings with GPS using state plane coordinates.

Shown	Not Shown	Does Not Apply
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CHECK OFF ITEMS:

- ___ ___ ___ Sewer taps must be a minimum of 5 feet from the edge of driveways or roadways.
- ___ ___ ___ Sewer manhole lids shall be East Jordan Iron Works Model V1600-3 with a 25 1/2" opening.
- ___ ___ ___ A post construction video of all sewer lines shall be provided to Ocean Springs Public Works.
- ___ ___ ___ An Ocean Springs Public Works representative must be present when a manhole is being installed in city right of way or easement.
- ___ ___ ___ Sewer pipe shall extend 4" to 6" inside manholes.
- ___ ___ ___ The Owner/Developer must provide a letter of design approval from the Mississippi Department of Environmental Quality.
- ___ ___ ___ Manhole number, size of sewer lines and manhole invert(s) elevations shall be labeled on all applicable sheets.
- ___ ___ ___ "Dog house" manholes are not permitted in the City of Ocean Springs
- ___ ___ ___ All manholes shall have a minimum of 12" of No. 4 or No. 57 crushed limestone foundation.

LIFT STATIONS

NOTES TO BE INCLUDED ON UTILITY PLANS:

- ___ ___ ___ Lift Stations shall be constructed in accordance with the attached detail drawing and City of Ocean Springs specifications.
- ___ ___ ___ A bypass connection and valve shall be provided at each lift station.
- ___ ___ ___ All lift stations shall have a potable water hose bib installed.
- ___ ___ ___ A spare pump for the lift station shall be provided to Ocean Springs Public Works.
- ___ ___ ___ All Sewer lift station pumps shall be three phase power. If three phase power is not available, the developer will be required to run and pay for three phase power to the lift station site.
- ___ ___ ___ The lift station Control Panel shall be manufactured by the current, approved City vendor per attached detail drawing and City of Ocean Springs specifications.
- ___ ___ ___ Lift station check valve shall be a Mueller swing type lever per the attached city specification.
- ___ ___ ___ The size of force main(s) shall be labeled on all applicable sheets.
- ___ ___ ___ A six (6) foot tall wooden fence shall be installed around lift stations with an 8' wide opening (2-4' wide gates).

Shown	Not Shown	Does Not Apply
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CHECK OFF ITEMS:

- ___ ___ ___ An alarm light shall be installed higher than the top of the fence. The light should be visible from the adjacent road.
- ___ ___ ___ A work light shall be installed inside lift station fence.
- ___ ___ ___ 316 Stainless Steel strain relief shall be provided for pump cables.
- ___ ___ ___ A minimum of 12" of #57 or #4 limestone foundation will be provided under the wet well.
- ___ ___ ___ Grade 316 Stainless steel bolts shall be used on all fittings in the wetwell, valve box, and bypass assembly and stainless steel or aluminum platforms and rails shall be used throughout lift station.
- ___ ___ ___ A flapper valve or P trap shall be installed in the drain line from the valve box to the wet well.
- ___ ___ ___ A 1" gate valve shall be installed downstream of the check valve on all force mains with the note: "City will install gauge."
- ___ ___ ___ Three (3) 2" conduits shall be provided from the panel box to the well. Seals shall be provided at all electrical fittings.
- ___ ___ ___ Four (4) individually weighted control floats shall be provided hanging from a 316 stainless steel float bar with J hooks .
- ___ ___ ___ A four (4") thick 3000 psi concrete slab shall be provided inside the fenced lift station area.
- ___ ___ ___ A ten (10) foot wide access route shall be provided to the front gate of the lift station(s). Access route surface shall include adequate base material and provide an all weather driving surface.
- ___ ___ ___ A minimum of 24" clearance in all directions (360°) around all valves, pipes, and fittings shall be provided inside the valve pit.
- ___ ___ ___ A 4" 316 Stainless steel 180° vent pipe with a stainless steel screens will be provided in the lift station top.
- ___ ___ ___ All wet well penetrations shall be water plugged inside and outside. Pipes shall extend 4" to 6" Inside the wet well.

STREETS AND DRAINAGE

NOTES TO BE INCLUDED ON UTILITY PLANS:

- ___ ___ ___ No french drains are permitted within City right of way.

Shown	Not Shown	Does Not Apply
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CHECK OFF ITEMS:

- ___ ___ ___ A Storm Water Pollution Prevention Plan (SWPPP) shall be included in the plans.
(Submit a copy of MDEQ's approval with this check sheet if the parcel is over five acres and
Submit pre and post development and retention/detention pond calculations if the parcel is over
two acres.)
- ___ ___ ___ A minimum of 3500 psi concrete shall be used for construction of curbs and gutters.
- ___ ___ ___ Cul-de-sacs shall have a minimum right-of-way radius of fifty (50) feet and a minimum driving
surface radius of forty (40) feet.
- ___ ___ ___ Street gutter grades shall not be less than 0.3 percent.
- ___ ___ ___ Streets shall have a minimum vertical clearance of fourteen (14) feet.
- ___ ___ ___ All roadway construction, including but not limited to pavement, base and sub-base, shall be
constructed in accordance with the current MS Standard Specifications for Road and Bridge
Construction.
- ___ ___ ___ All lot numbers must be stenciled in paint on the curb and maintained until final acceptance of the
development by the City of Ocean Springs.
- ___ ___ ___ A proof roll test of base and sub-base must be performed in the presence of an Ocean Springs
Public Works representative. The Owner/Developer must notify Public Works a minimum of 24
hours prior to the test.
- ___ ___ ___ Lime-Fly Ash or Soil Cement stabilization design mix and application rates must be prepared by a
licensed engineer and submitted with the plans. (MDOT recommendations and City example
specifications available upon request.)
- ___ ___ ___ ADA compliant ramps for handicap access shall be provided on all sidewalks.
- ___ ___ ___ The location, size, material, and slope of drainage pipes shall be labeled on all applicable plan
sheets.
- ___ ___ ___ Written approval from MDOT is required for access to state highway right-of-ways.
- ___ ___ ___ All drainage inlets must be numbered on the plans.
- ___ ___ ___ All catch basins and manholes shall be located and recorded on the record drawings with GPS
using state plane coordinates.
- ___ ___ ___ All driveway culverts shall be Class III Reinforced Concrete Pipe (RCP).
- ___ ___ ___ Lifting holes on RCP shall be plugged using water plug hydraulic cement.

- ___ ___ ___ HDPE pipe less than 24" in diameter has a maximum burial depth of 5 feet from surface to invert of the pipe.
- ___ ___ ___ All drainage pipe installed greater than 5 feet deep shall be RCP.
- ___ ___ ___ All joints of any pipe material shall be wrapped in geotextile fabric.
- ___ ___ ___ The culvert location, size, material, and grade must be approved by Ocean Springs Public Works.
- ___ ___ ___ A post construction video of all storm drain pipes shall be provided to the Ocean Springs Public Works Department.

General Requirements:

1. Deviations from these guidelines must be submitted to the Ocean Springs Public Works Department prior to 'Construction Plan Approval'. A list of 'Deviations to Guidelines' shall be submitted on the attached sheet.
2. Any requested changes or modifications to 'Approved Construction Plans' must be submitted five (5) working days prior to starting construction on items that involve a requested change or modification.
3. All requested changes or modifications to 'Approved Construction Plans' must be approved in writing by the Ocean Springs Public Works Department.
4. For "Final Acceptance" the engineer of record must certify in writing to the City that the construction is in substantial accordance with the approved plans. Two consecutive satisfactory bacteriological test results of the water distribution system must be furnished to the City. One set of "Record Drawings" (contractor record) must be submitted to Ocean Spring Public Works five (5) days prior to requesting a final inspection.

TESTING REQUIREMENTS AND PROCEDURES

Pressure Testing of Force Mains and Water Lines:

- All newly installed pipelines and appurtenances shall be tested by a hydrostatic pressure test conducted at a minimum of 150 psig, or static pressure plus 50% whichever is greater.
- After the water lines or isolated sections of the pipeline have been filled with water, the pressure shall be increased to the test pressure by means of a hydraulic force pump. The leakage test shall be in accordance with AWWA M23.
- The CONTRACTOR shall furnish all necessary equipment, material, make all taps in pipe and provide all labor for conducting the tests.
- The duration of the hydrostatic leakage test shall be two (2) hours or as specified by the City.
- The source of water for the pump suction shall be potable water from the City's distribution system. The vessel used must be approved by the City.
- All interior valves including valves on fire hydrants and other appurtenances shall be open during all tests.
- The maximum leakage per hour for ductile iron and P.V.C. pipe shall be as calculated from the following formula (All rubber gasket or O-ring joints):

$$L = \frac{ND \sqrt{P}}{7400}$$

- L = allowable leakage, (gallons per hour)
- N = number of joints
- D = nominal diameter of pipe, (inches)
- P = average test pressure during test, (psig)

Air Testing of Gravity Sewer Lines

- The CONTRACTOR shall perform the testing of manhole construction, pipe materials and/or other materials incorporated into the construction of the sanitary sewer system to determine leakage and water tightness. Testing to be supervised by the City.
- All gravity sewer lines shall be tested in accordance with the following procedures:
 - (a) Plug all pipe outlets with suitable test plugs. Brace each plug securely.
 - (b) Pipe air supply to the pipeline to be tested in such a manner that the air supply may be shut off, pressure observed and air pressure released from the pipe without workmen entering the manhole.
 - (c) Add air slowly to the portion of pipe under test until the internal pressure of the line is raised to approximately 4 psig but less than 5 psig.
 - (d) Shut the air supply off and allow at least two minutes for the air pressure to stabilize.
 - (e) When the pressure has been bled down to 3 ½ psig and stabilized, start the test.
 - (f) If the pipe section does not drop below 3.0 psig in the allotted time the section passes the test.

Gravity Sewer Air Testing Time Requirements

Minimum Time Requirements for 0.5 PSIG
Pressure drop from 3.5 PSIG to 3.00 PSIG
(Not less than shown between manholes)

<u>Pipe Size</u>	<u>Time</u>
8"	5.0 minutes
10"	6.5 minutes
12"	7.5 minutes
15"	9.5 minutes
18"	11.5 minutes
24"	13.5 minutes

Manhole Vacuum Testing

-The manhole vacuum test shall be performed with suitable apparatus made for such purpose and shall draw a vacuum of 10" of mercury (Hg). The test shall pass if the vacuum remains at 10" of mercury (Hg) or drops to not less than 9" of mercury (Hg) in one minute. Vacuum test will be performed by construction CONTRACTOR. Test shall be witnessed and documented by the City. If, after three (3) attempts to perform a satisfactory vacuum test have failed, the City may require that the manhole be removed and replaced/repoured.

CITY OF OCEAN SPRINGS
PUBLIC WORKS DEPARTMENT

Request to Deviate from City Plan Review Guidelines

Name of Development: _____ Date Submitted: _____

Approx. Location: _____ Developer's Name: _____

Developer's Engineer: _____ Developer's Engineer: _____
(Print Name) (Sign Here)

Reviewed By: _____ Date Approved: _____
(City Engineer)

Approved	Not Approved	City Engineer's Initials
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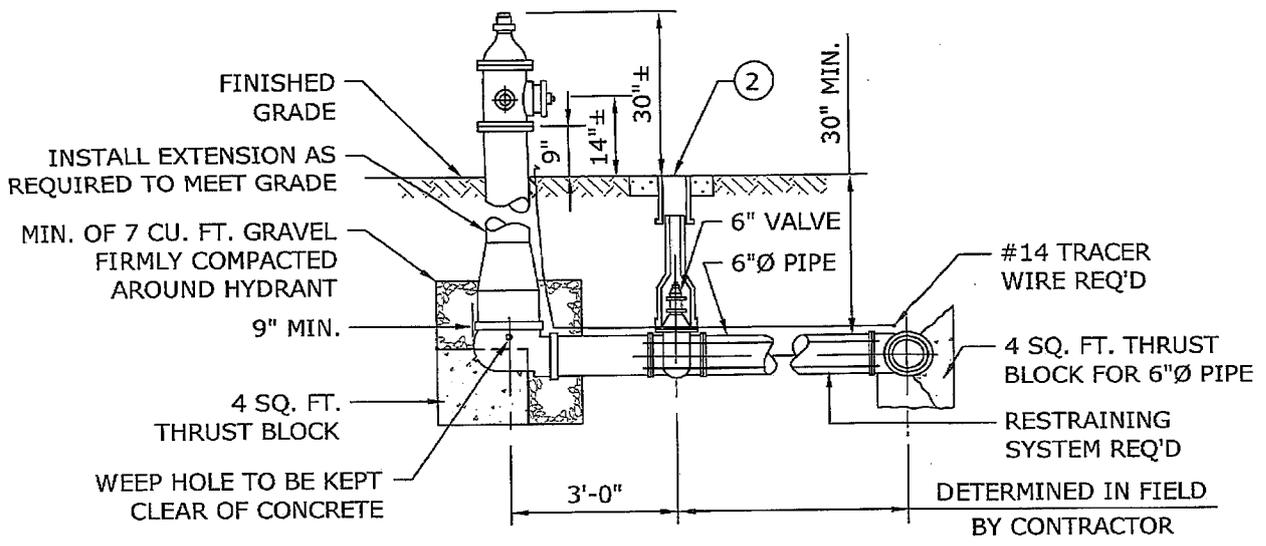
List Requested Deviations Here:

1. _____

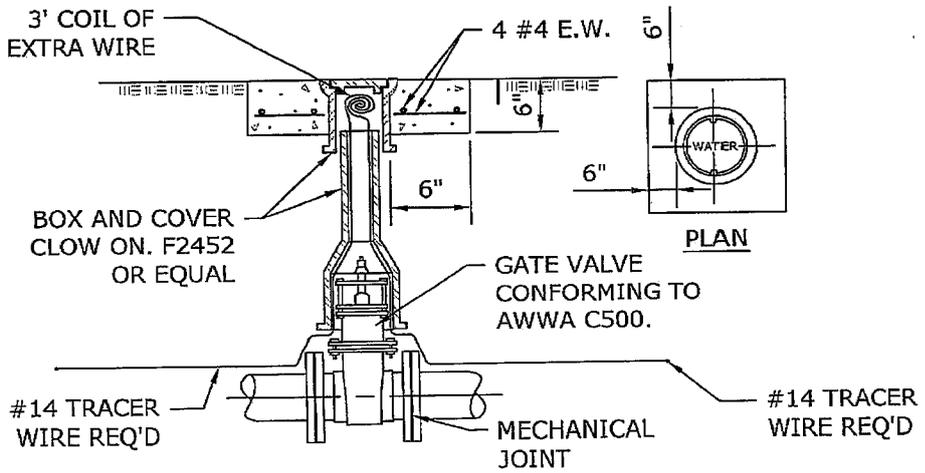
2. _____

3. _____

S:\Pascagoula\Projects\2014\214-034 City of O.S. - Misc Services\1001 Public Works\003 City Standards Development Checklist (21P-050,057)\0wpa\Current Design\Concept-Design\FIRE HYDRANT ASSEMBLY AND VALVE INSTALLATION 03.11 REV A.dwg, 8/24/2015 11:57:45 AM, Joseph, L.J.



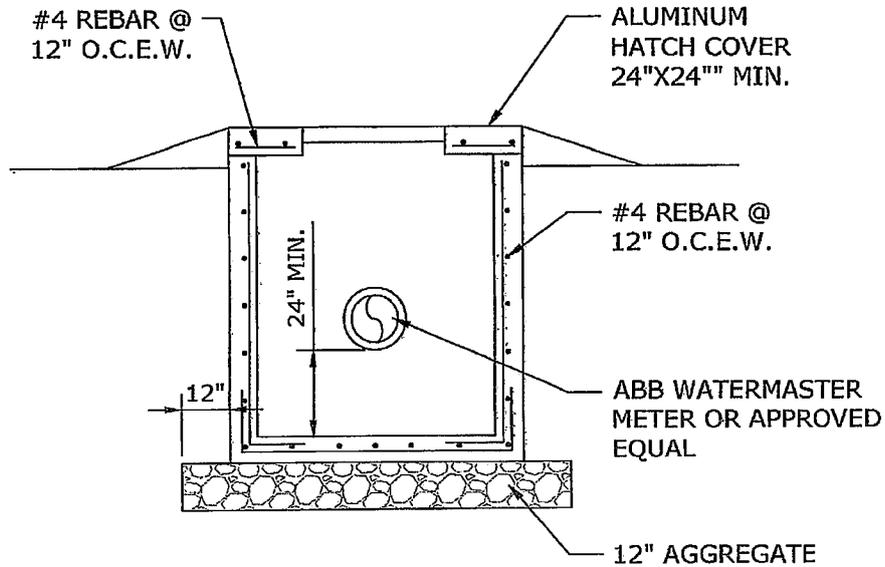
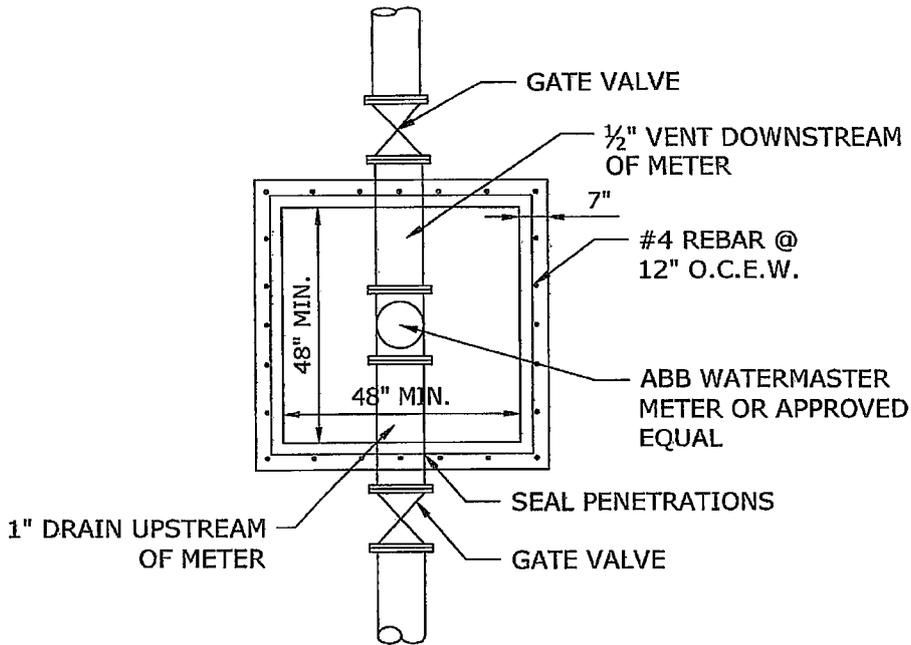
FIRE HYDRANT ASSEMBLY DETAIL
CITY OF OCEAN SPRINGS - (TYPICAL)
 SCALE: NOT TO SCALE



VALVE INSTALLATION
CITY OF OCEAN SPRINGS - (TYPICAL)
 SCALE: NOT TO SCALE

PREPARED BY:  COMPTON ENGINEERING, INC. Engineering, Surveying, and Environmental Services 1706 Convent Avenue Pascagoula, Mississippi 39567 Phone: (228) 762-3970 Fax: (228) 769-9079 E-mail: compton@comptonengineering.com	PREPARED FOR: City of Ocean Springs	DRAWN BY: JDL
	PROJECT TITLE: CITY OF OCEAN SPRINGS - STANDARD DETAILS	DATE DRAWN: AUGUST 2015
	NORTH ARROW	JOB NUMBER: 214-034.003
		SCALE: AS NOTED
FIGURE TITLE: FIRE HYDRANT ASSEMBLY AND VALVE INSTALLATION - PROFILE (TYPICAL)		REVISION NUMBER: A

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METER VAULT DETAIL
CITY OF OCEAN SPRINGS - (TYPICAL)

SCALE: NOT TO SCALE

PREPARED BY:



COMPTON ENGINEERING, INC.
 Engineering, Surveying, and Environmental Services
 1706 Convent Avenue
 Pascagoula, Mississippi 39567
 Phone: (228) 762-3970 Fax: (228) 769-9079
 E-mail: compton@comptonengineering.com

PREPARED FOR:

City of Ocean Springs

PROJECT TITLE:

CITY OF OCEAN SPRINGS -
 STANDARD DETAILS

NORTH ARROW

DRAWN BY:

JDL

DATE DRAWN:

AUGUST 2015

JOB NUMBER:

214-034.003

SCALE:

AS NOTED

REVISION NUMBER:

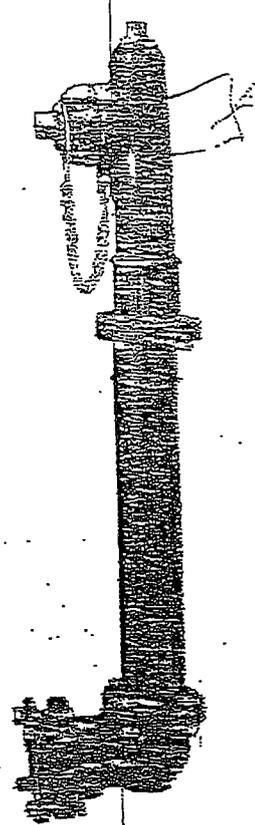
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FIGURE TITLE:

METER VAULT DETAIL - PROFILE (TYPICAL)

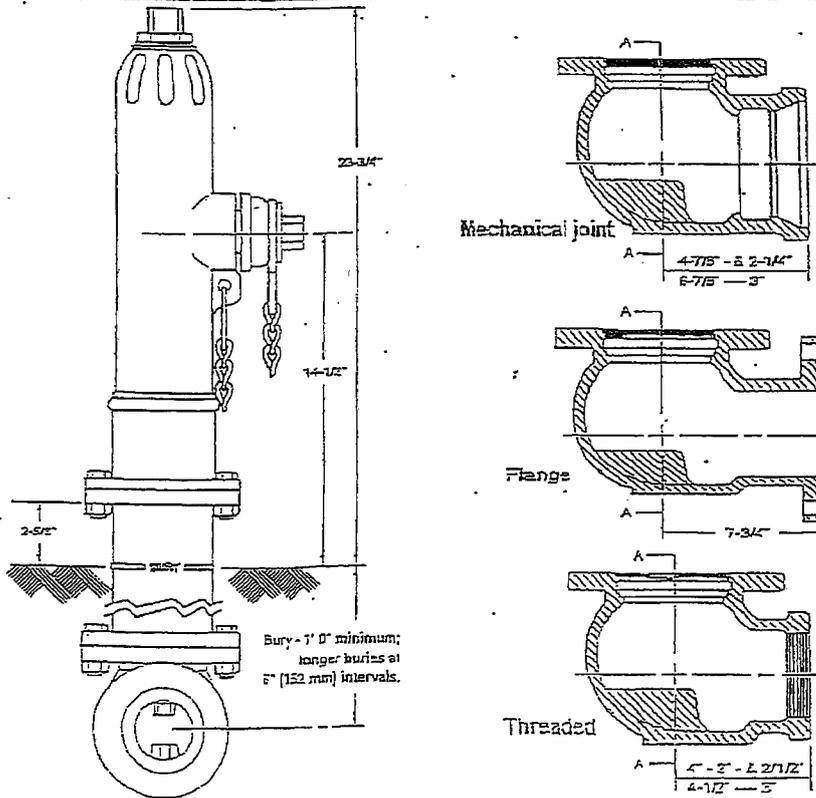
- Catalog numbers—
 - A-411 2-1/8" main valve opening two way (two 1-1/2" hose nozzles)
 - A-411 2-1/8" main valve opening one way (one 2-1/2" hose nozzle)
- Meets all applicable parts of ANSI/AWWA C502 Standard
- Post type dry barrel design
- Compression type main valve closes with pressure
- Operating nut available in wide variety of shapes and sizes
- Field replaceable hose nozzles
- Hose nozzles have large radius, full flow openings for low friction loss
- Contoured shoe is designed for full flow
- Dual bronze drain valves provide effective barrel drainage
- 150 psig (1034 kPa) maximum working pressure, 300 psig (2068 kPa) test pressure

*WATER
Purge Points*



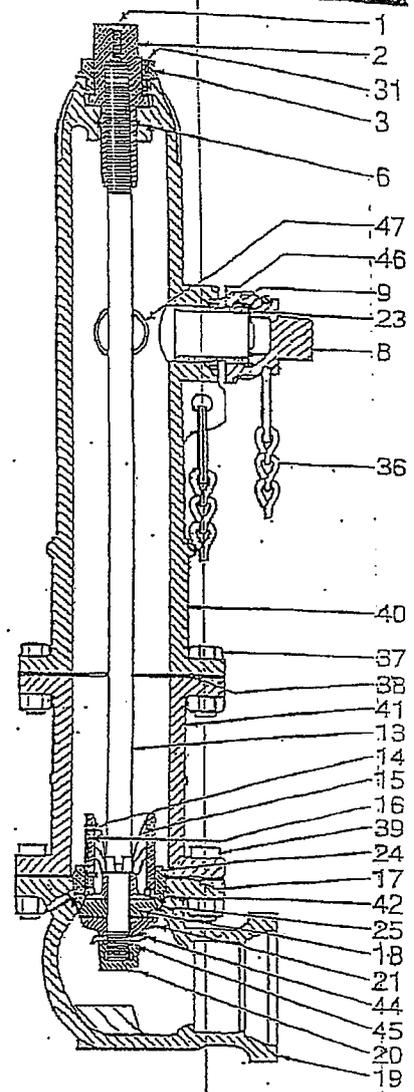
* INSTALL FOR ABOVE GROUND FLUSHING AT
END OF LINES, WHERE APPLICABLE.

Dimensions



MUELLER 2-1/8" Post Type Fire Hydrant

Cat. part no.	Description	Material	Material standard
1	Oil screw for operating nut	Brass	ASTM B36
2	Operating nut	Bronze	ASTM B584
3	Hold down nut	Bronze	ASTM B584
6	Operating nut O-ring	Rubber	ASTM D2000 BUNA-N
8	Hose nozzle cap	Cast iron	ASTM A126 CL. B
9	Hose nozzle	Bronze	ASTM B584
15	Stem	Steel	ASTM A576 GR. B
14	Drain valve screw	Stainless steel	ASTM A307
15	Upper valve plate*	Bronze	ASTM B584
16	Drain valve facing	Plastic	
17	Shoe gasket	Rubber	ASTM D2000
18	Main valve	Rubber	ASTM D2000
19	Shoe	Cast iron	ASTM A126 CL. B
20	Valve plate nut	Bronze	ASTM B584
21	Lower valve plate	Cast iron	ASTM A126 CL. B
23	Hose nozzle O-ring	Rubber	ASTM D2000 Neoprene
24	Seat ring	Bronze	ASTM B584
25	Seat ring gasket	Copper	ASTM A372
31	Oil screw	Brass	ASTM B36
31B	O-ring (for oil screw)	Rubber	ASTM D2000 BUNA-N
36	Nozzle cap chain	Steel	Plated
37	Barrel flange bolt and nut	Steel	ASTM A307 Plated
38	Barrel flange gasket	Rubber	ASTM D2000
39	Shoe bolt and nut	Steel	ASTM A307 Plated
40	Upper barrel	Cast iron	ASTM A126 CL. B
41	Lower barrel	Cast iron	ASTM A126 CL. B
42	O-ring	Rubber	ASTM D2000
44	Valve nut washer	Stainless steel	ASTM A276
45	Valve nut seal	Rubber	ASTM D2000
46	Nozzle lock	Stainless steel	ASTM A276
47	Hose nozzle gasket	Rubber	ASTM D2000 Neoprene



*Includes items #14 and #16.
For pre-1986 models refer to parts drawing on page 9.37.

A-312 Operating wrench— operates nozzle caps, pin and lug type hose couplings, hydrant operating nut and hold down nut.

A-347 Seat wrench— Adjustable, used to remove main valve and seat ring from ground line level.

A-51 Hydrant lubricating oil— 10.5 ounce conta of all-weather oil

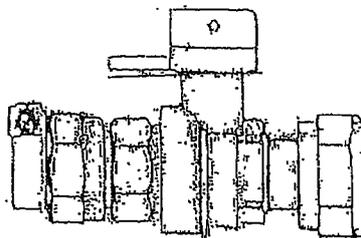
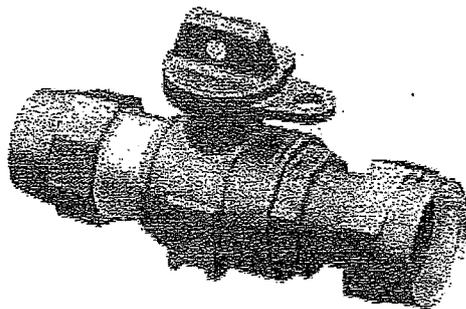
A-316 Nozzle wrench— Used to remove and install threaded in hose and pumper nozzles.

A-317 Nozzle lock installation tool— Used to install nozzle locking device.

Curb Stop Detail

$\frac{3}{4}$ " BALL VALVE, PAD WING
1" CTS PACK JOINT
 $\frac{5}{8}$ " METER SWIVEL NUT

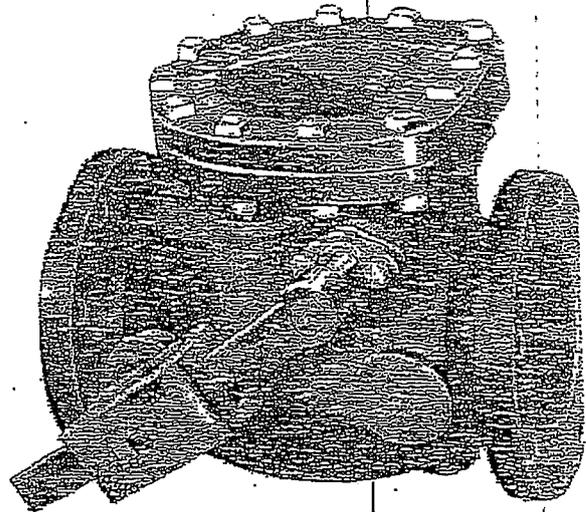
Ford Meter Box Co. — B43-344W or equal





MULLER® SWING TYPE LEVER AND WEIGHT CHECK VALVES WITH FL. X FL. ENDS

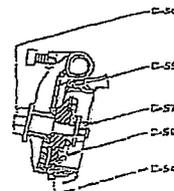
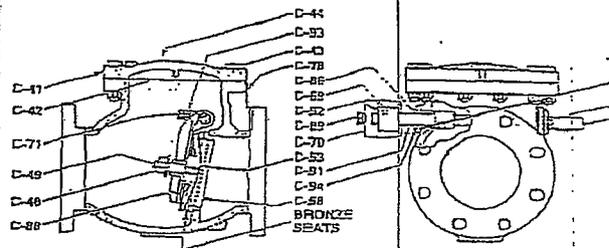
- Catalog number—
A-2600-6-01 flanged ends, weight and lever operated with bronze disc facing
A-2602-6-01 flanged ends, weight and lever operated with rubber disc facing
- Sizes—2-1/2", 3", 4", 4"x6", 4"x8", 6", 6"x8", 6"x10", 8", 10", 12", 14", 16", 18", 20", and 24"
- Meets all applicable parts of ANSI/AWWA C508 Standard
- Flanged end dimensions and drilling comply with ANSI B16.1, class 125
- Iron body, bronze mounted (IBBM)
- Choice of bronze or rubber disc facing
- For vertical or horizontal installation
- O-ring sealed stuffing box
- Adjustable weight to control opening and closing of clapper, lever can be installed on either side of valve
- 2-1/2"-12" sizes—175 psig (1207 kPa) maximum working pressure, 350 psig (2414 kPa) test pressure
- 14"-24" sizes—150 psig (1034 kPa) maximum working pressure, 300 psig (2068 kPa) test pressure



A-2600-6-01

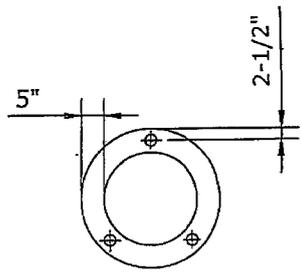
Check Valve parts

Catalog part No.	Description	Material	Material standard
C-41	Cover	Cast iron	ASTM A 126 CL B
C-42	Cover gasket	Rubber	ASTM D2000
C-43	Cover bolt and nut	Steel	ANSI B 18.2.1
C-44	Test plug	Cast iron	
C-48	Stud nut	Bronze	ASTM B62
C-49	Disc stud	Bronze	ASTM B21
C-53	Disc ¹	Cast iron	ASTM A 126 CL B
C-58	Seal ring	Bronze	ASTM B584
C-66	Cap screw	Steel	ANSI B 18.2.1
C-69	Pin	Steel	
C-70	Weight	Cast iron	ASTM A 126 CL B
C-71	Set screw	Stainless steel	ASTM A 193
C-78	Body	Cast iron	ASTM A 126 CL B
C-86	Stuffing box w/bushings	Bronze	
C-88	Clapper arm	Bronze	ASTM B584
C-89	Set screw	Steel	ANSI B 18.6.2
C-91	Hinge pin	Stainless steel	ASTM A582
C-92	Weight lever ²	Steel	ASTM A36
C-93	Jam nut	Stainless steel	ASTM A 194
C-94	Hinge pin O-ring	Rubber	ASTM D2000
C-95	Body O-ring	Rubber	ASTM D2000
Rubber faced disc parts			
C-50	Disc stud—rubber faced	Bronze	ASTM B21
C-54	Disc—rubber faced	Cast iron	ASTM A 126 CL B
C-55	Rubber disc facing	Rubber	ASTM D2000
C-56	Retaining washer	Bronze	ASTM B584
C-57	Stud nut	Bronze	ASTM B62

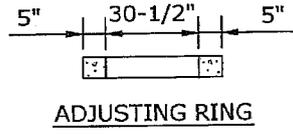


¹ 2" and smaller valve use bronze ASTM B584
² 2" and 6" sizes use ductile iron ASTM A36

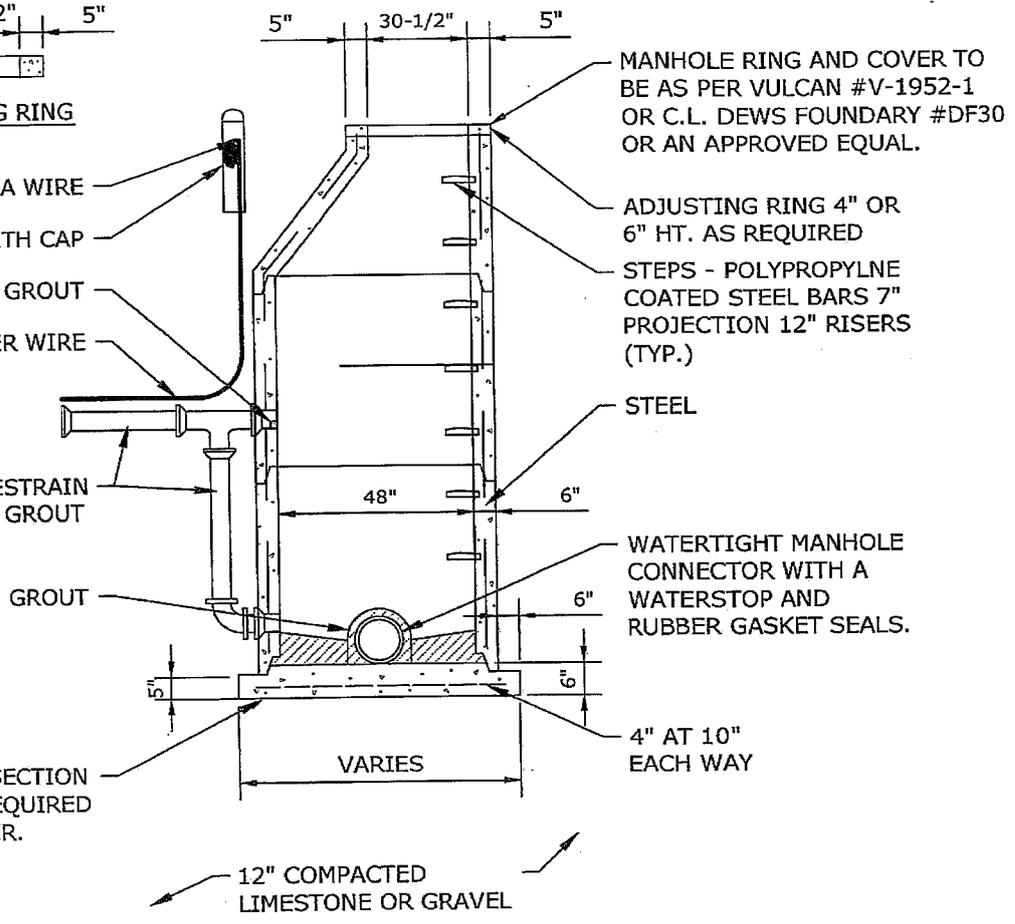
S:\Pascagoula\Projects\2014\214-034 City of O.S. - H&E Services\001 Public Works\001 City Standards Development Checklist (210-000.057)\DWG\Current Design\Concept Design\DROP MANHOLE - BELL REV A.dwg 10/29/2015 4:57:02 PM, Joseph, 1:1



CONTRACTOR SHALL INSURE NEW MANHOLE TOP IS FLUSH WITH EXISTING GRADES UNLESS NOTED.

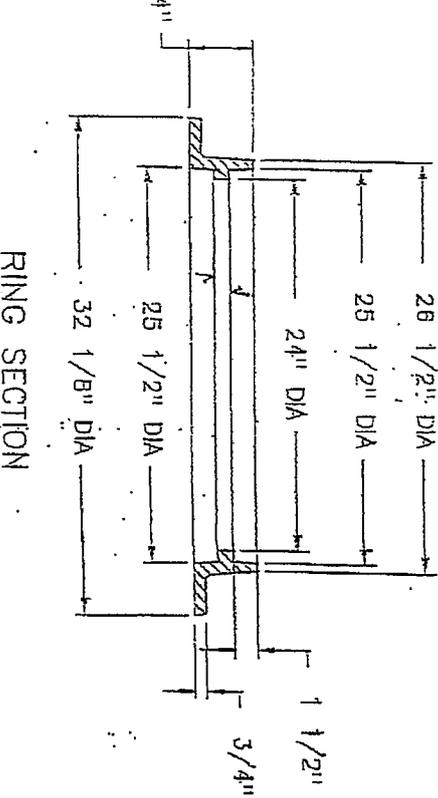
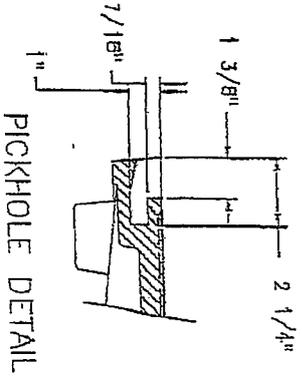
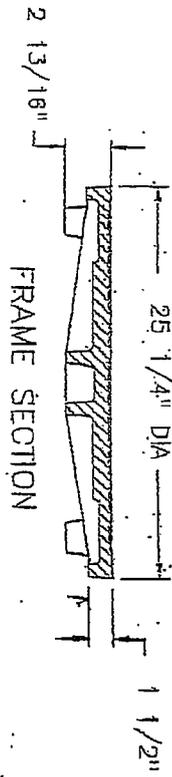
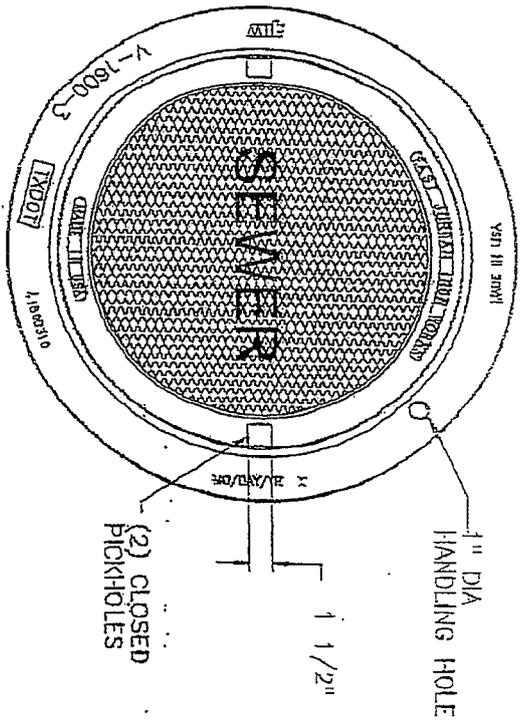


- 3rd COIL OF EXTRA WIRE
- 2" PVC PIPE WITH CAP
- 1 BRICK OR 4" GROUT
- 14 GA. TRACER WIRE



DROP MANHOLE
CITY OF OCEAN SPRINGS - (TYPICAL)
 SCALE: NOT TO SCALE

PREPARED BY:  COMPTON ENGINEERING, INC. Engineering, Surveying, and Environmental Services 1706 Convent Avenue Pascagoula, Mississippi 39567 Phone: (228) 762-3970 Fax: (228) 769-9079 E-mail: compton@comptonengineering.com	PREPARED FOR: City of Ocean Springs	DRAWN BY: JDL
	PROJECT TITLE: CITY OF OCEAN SPRINGS - STANDARD DETAILS	DATE DRAWN: AUGUST 2015
NORTH ARROW	JOB NUMBER: 214-034.003	SCALE: AS NOTED
FIGURE TITLE: DROP MANHOLE - PROFILE (TYPICAL)	REVISION NUMBER: A	



RING SECTION

FRAME SECTION

PICKHOLE DETAIL

NOTE: FRAME IS REVERSIBLE. WHEN ORDERING, SPECIFY TOP FLANGE OR BOTTOM FLANGE

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EJW EAST JORDAN IRON WORKS EST. 1985 B00-626-4853 www.ejw.com MADE IN USA	
PRODUCT NUMBER	41600306
CATALOG NUMBER	V1600-3
MANHOLE ASSEMBLY LOAD RATING HEAVY DUTY COATING UNDIPPED	
ESTIMATED WEIGHT	135 LBS
COVER	118 LBS
FRAME	118 LBS
UNIT	253 LBS
MATERIAL SPECIFICATION COVER - GRAY IRON ASTM A48 CL35B FRAME - GRAY IRON ASTM A48 CL35B OPEN AREA N/A	
DESIGNATES MACHINED SURFACE	
DRAWN	DATE
SBB	07/14/04
LAST REVISED	DATE
GAD	10/29/07
REFERENCE INFORMATION 41600310 41600320	

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ASSOCIATED PUMP & SUPPLY, INC.

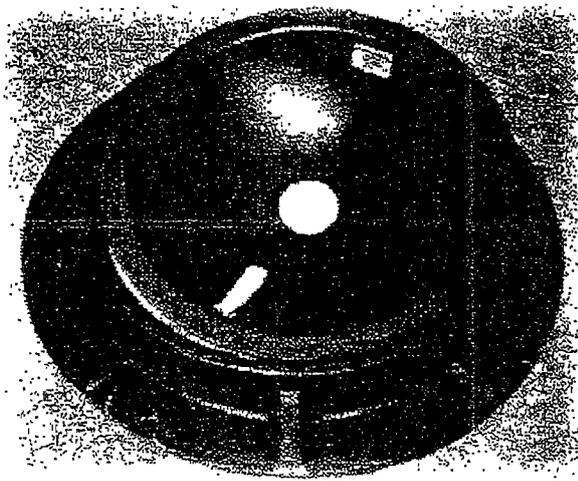
9074 Park Avenue • Houma, LA 70363
Phone: 985-851-7077

6501 Sunplex Dr. • Ocean Springs, MS 39564
Phone: 228-818-6400

RainGuard Inflow Protectors

Reduces Inflow...

With sewage treatment costs rising, and many city systems strained to the breaking point, city officials are taking a closer look at streamlining existing plant operations and sewer systems. One way to make treatment plants more efficient and cost effective is to eliminate rainwater and other run-off from the sewer system. LFM's RainGuard Inflow Protector solves the problem of infiltration into the sewer system through manholes. On an average rainy day, a manhole can allow anywhere from 3,000 to 12,000 gallons of rainwater to enter the sewer treatment system.



Reduces Sewage Treatment Costs...

The RainGuard Inflow Protector reduces sewage treatment costs by reducing the amount of rainwater and other run-off from entering the treatment system.

Strong and Lasting Construction...

The RainGuard Inflow Protector and its associated components are manufactured from a corrosion proof material called acrylonitrile-butadiene-styrene (ABS). This material is a high impact, high grade material manufactured under ASTM Specifications D-256 method A, D-638, D-790, D-785, D-648 method A and D-635. The RainGuard meets or exceeds all of these strict requirements. Its anti-corrosive nature makes it suitable for the harshest of sewer atmospheres. The RainGuard is impervious to such common sewer gases such as Hydrogen Sulfide and dilute Sulfuric Acid. The RainGuard Inflow Protector comes with a pressure sensitive adhesive gasket that is placed under the rim of the protector. The gasket is made of a high quality closed cell neoprene which is designed to give a long lasting bond in either wet or dry conditions.

Controls Manhole Odors...

Odors that come from a manhole can make the air we breathe rather unpleasant. The unique design of LFM's RainGuard Inflow Protector stops odors from rising out of a manhole.

Options...

Our RainGuard Inflow Protector can be built with many different options to serve your specific applications. LFM can install a gas relief valve, a strap and/or a vent onto the inflow protector. The gas relief valve is designed to relieve gases at a pressure of 1 psi and have a water leak down rate of approximately 5 gallons per 24 hour period. The RainGuard Inflow Protector can be built with handy straps attached, making access to the manhole easy. We build RainGuard Inflow Protectors in many different diameters and with many combinations of options to fit your specific need. Contact your LFM sales representative to find out which options and which size best fits your needs.

Quality Assurance...

The RainGuard Inflow Protector carries a full one year warranty against defects and workmanship. At LFM we stand behind the products we build.

Distributed by
ASSOCIATED PUMP & SUPPLY, INC.

9074 Park Avenue • Houma, LA 70363
Phone: 985-851-7077

6501 Sunplex Dr. • Ocean Springs, MS 39564
Phone: 228-818-6400

Doc.# IFS-1400 August 11, 1992

MANHOLE INFLOW PROTECTOR SPECIFICATION

A.1 SCOPE: Under this item the contractor shall supply and install to the manufacturer's recommendations a manhole - inflow protector - as specified hereafter. Rain Guard Model LFN-SV as fabricated by L.F. Manufacturing, Inc., Giddings, Texas or approved equal.

A.2 DESIGN: The manhole insert body shall be designed with six equally spaced re-enforcement ribs (1 1/2" wide, 1/2" deep, and 6 1/2" long) in the bottom and will support a minimum uniform load of 800 pounds. The insert body shall have a recessed area in the center of the bottom for protection of the valve body. The insert will have two nylon lifting straps designed to lift and support a minimum uniform load of 500 pounds. The completed manhole inflow protector and its associated valve body and components shall be manufactured from corrosion proof material suitable for atmospheres containing hydrogen sulfide and dilute sulfuric acid as well as other gases associated with wastewater collection systems.

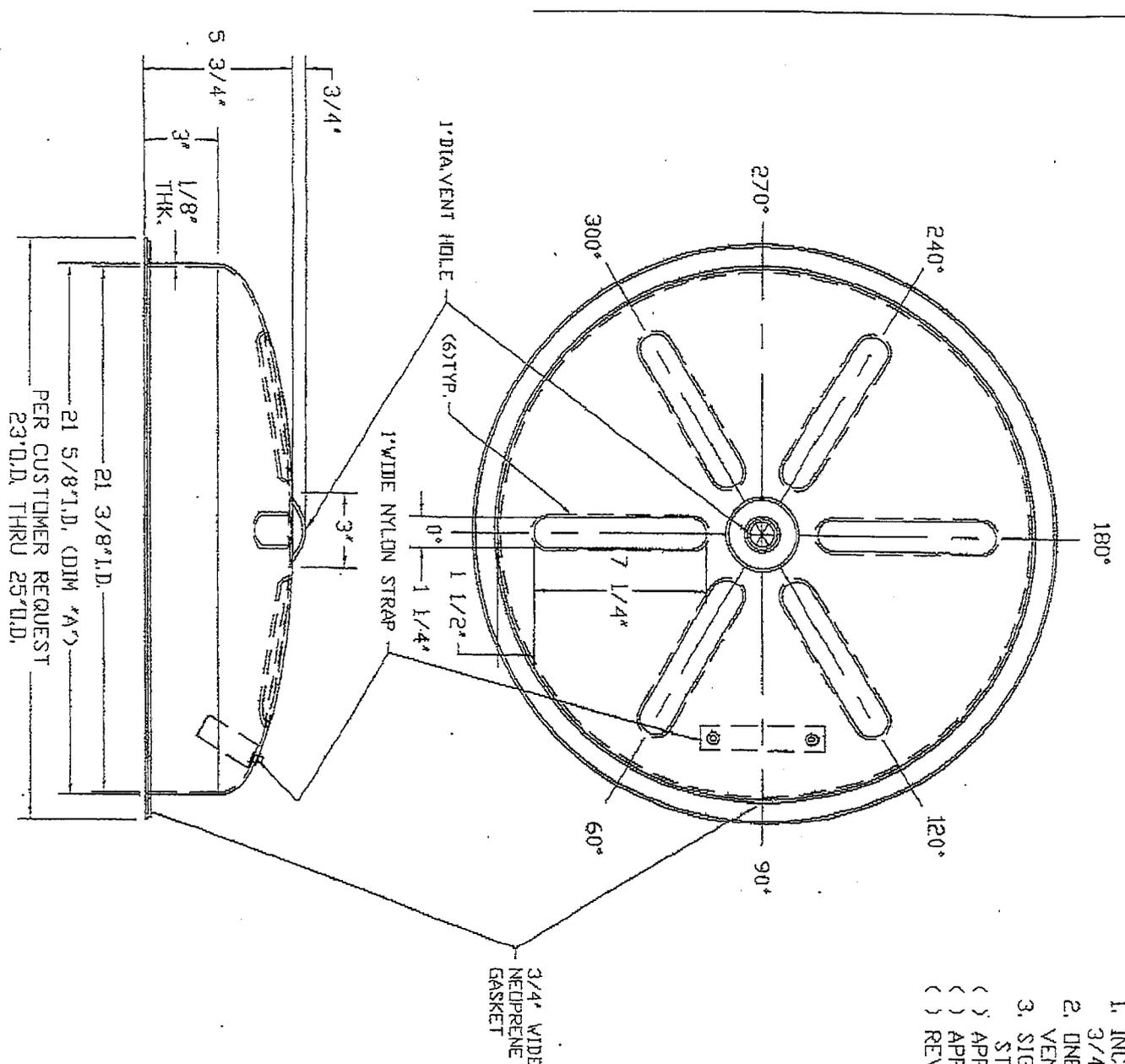
A.3 MATERIALS:

INSERT BODY: The insert body shall be fabricated from **ACRYLONITRILE-BUTADIENE-STYRENE (ABS)** high impact, high grade LS material specifications under ASTM D-256 method A, D-638, D-790, D-785, D-648 method A and D-635 as manufactured by Borg Warner Grade LS Cyclocac or equal.

RELIEF VALVE: The gas relief valve shall be designed to relieve at a pressure of 1 psi and have a water leak down rate not to exceed 5 gallons per 24 hours. The valve shall be installed by means of a threaded hole tapped in the center of the insert body by the manufacturer.

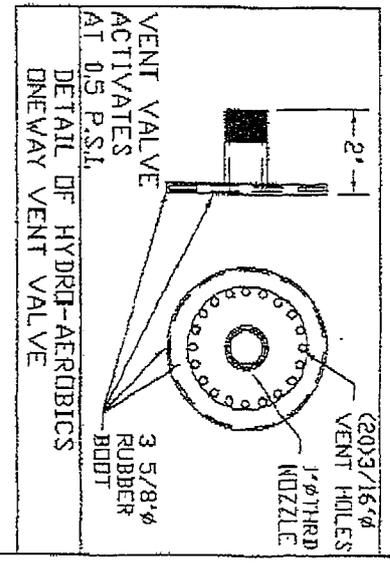
INSERT GASKET: The gasket shall be made of closed cell neoprene and have a pressure sensitive adhesive on one side and be placed under the insert body rim by the manufacturer. The adhesive shall be compatible with the insert body material so as to form a long lasting bond in either wet or dry conditions of use.

LIFTING STRAP: The lifting strap material shall be polypropylene webbing 1" wide, .100" thick, 1100# tensile strength and shall be fastened to the insert body with stainless steel rivets and fender washers.



21 3/8" I.D.
 21 5/8" I.D. (DIM "A")
 PER CUSTOMER REQUEST
 23" O.D. THRU 25" O.D.

- NOTES:**
1. INCLUDES 1 HANDLE STRAP AND 1/8" THK X 3/4" WIDE CLOSED CELL NEOPRENE GASKET.
 2. ONE WAY VALVE OPTIONAL. SCREWS INTO VENT HOLE.
 3. SIGNED APPROVED DRAWING REQUIRED BEFORE START OF MANUFACTURING. DATE: _____
- () APPROVED
 () APPROVED AS NOTED
 () REVISE & RESUBMIT



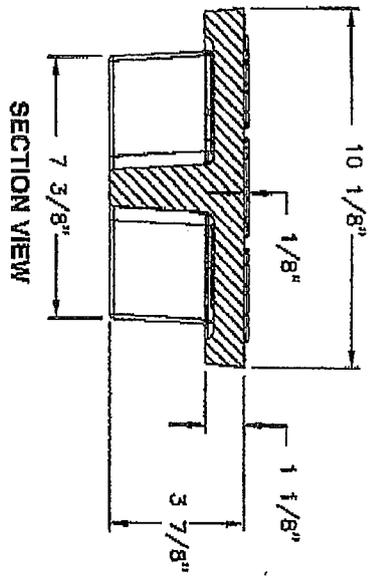
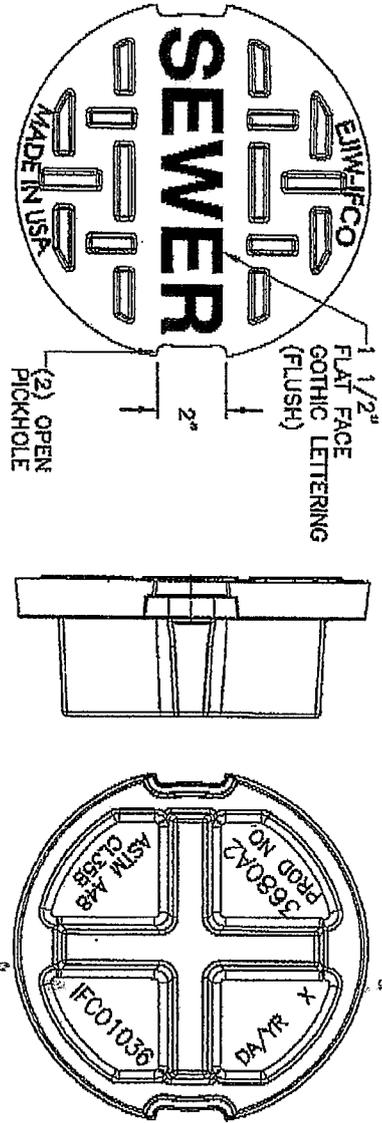
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
LFN-SV	STRAP & VALVE	1	EA
LFN-S	STRAP ONLY	1	EA
LFN-VH	VENT HOLE ONLY	1	EA
LFN-VHS	STRAP & VENT HOLE	1	EA

LFN RAINGUARD DESCRIPTION: LFN RAINGUARD TOLERANCES: FRACTIONAL = 1/16 DECIMAL = ±.030 ANGLES = ±.062 HOLE = ±.010 UNLESS OTHERWISE SPECIFIED		OPER. PRESS. OPER. PRESS.
DESIGN TEMP. OPERATING TEMP. DESIGN PRESS.	DESIGN SP. OR. PERFORM. SP. OR.	DATE: 12/03/96 1 OF 1

DRAWN BY: [blank] CHECKED BY: [blank] T.L.V. JDM SOLD BY: CUSTOMER	REV. C 11/21/92 NMM REV. B 11/21/92 NMM REV. A 11/21/92 NMM A-MD0421	DATE: 12/03/96 1 OF 1
---	---	--------------------------

3680A2 COVER

for sewer clean-out



PRODUCT NUMBER
00368042

DESIGN FEATURES
 MATERIALS
 COVER-GRAY IRON
 ASTM A48 CLASS
 DESIGN LOAD
 HEAVY DUTY
 COATING
 UNDIPPED
 OPEN AREA
 N/A
 DESIGNATES MACHINED SURFACE

Corporate Headquarters
 301 Spring Street
 PO Box 487
 East Jordan, MI
 49727-0487
 800.626.4100
EJ GROUP

Cell Technology for
 Material Identification

800.626.4653

EJIW EAST JORDAN

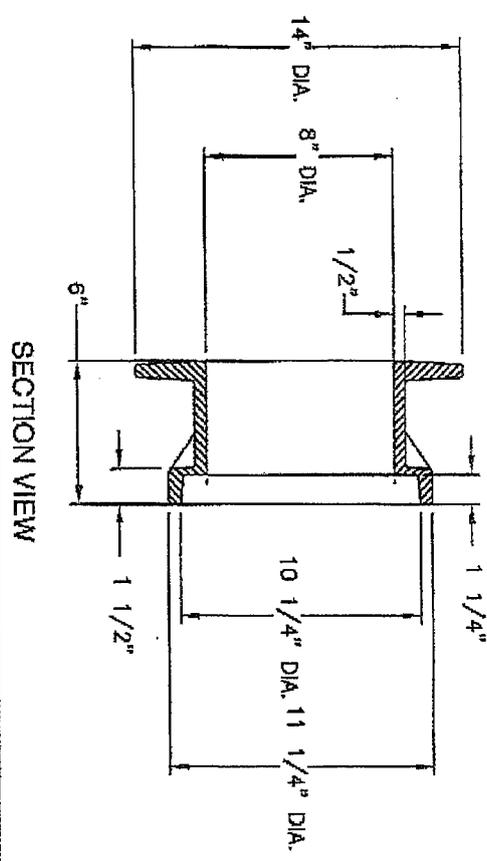
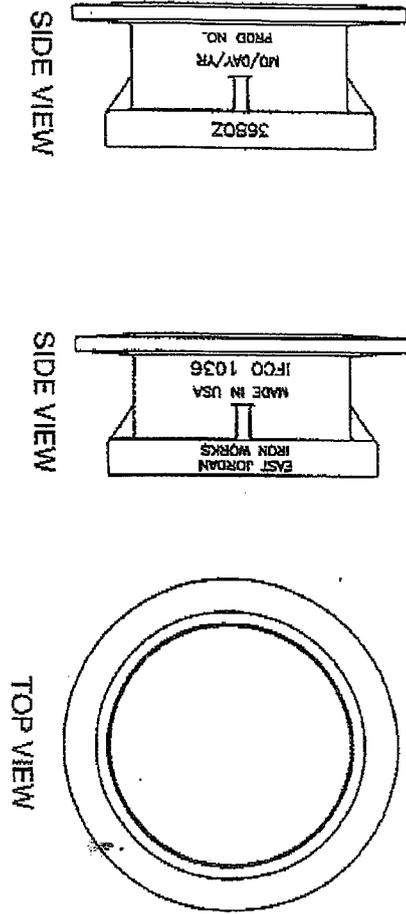
MADE IN THE USA

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Verify the actual dimensions and drawings provided for your product.
 *Reference to origin to create specifications will be in inches unless otherwise denoted.

DRAWING DETAILS
 ORIGINAL DRAWING: DEF 09/09/11
 REVISION BY: DEF 09/10/11

3680Z FRAME



Corporate
Headquarters
301 Spring Street
PO Box 489
East Jordan, MI
49722-0489
800.874.4100
EJI GROUP *

Call Today for
More Information

800.626.4655

EJIW EAST JORDAN

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PRODUCT NUMBER
00368010

DESIGN FEATURES

MATERIALS
FRAME: GRAY IRON
ASIM A48 C135B

DESIGN LOAD
HEAVY DUTY

COATING
DIPPED

OPEN AREA
N/A

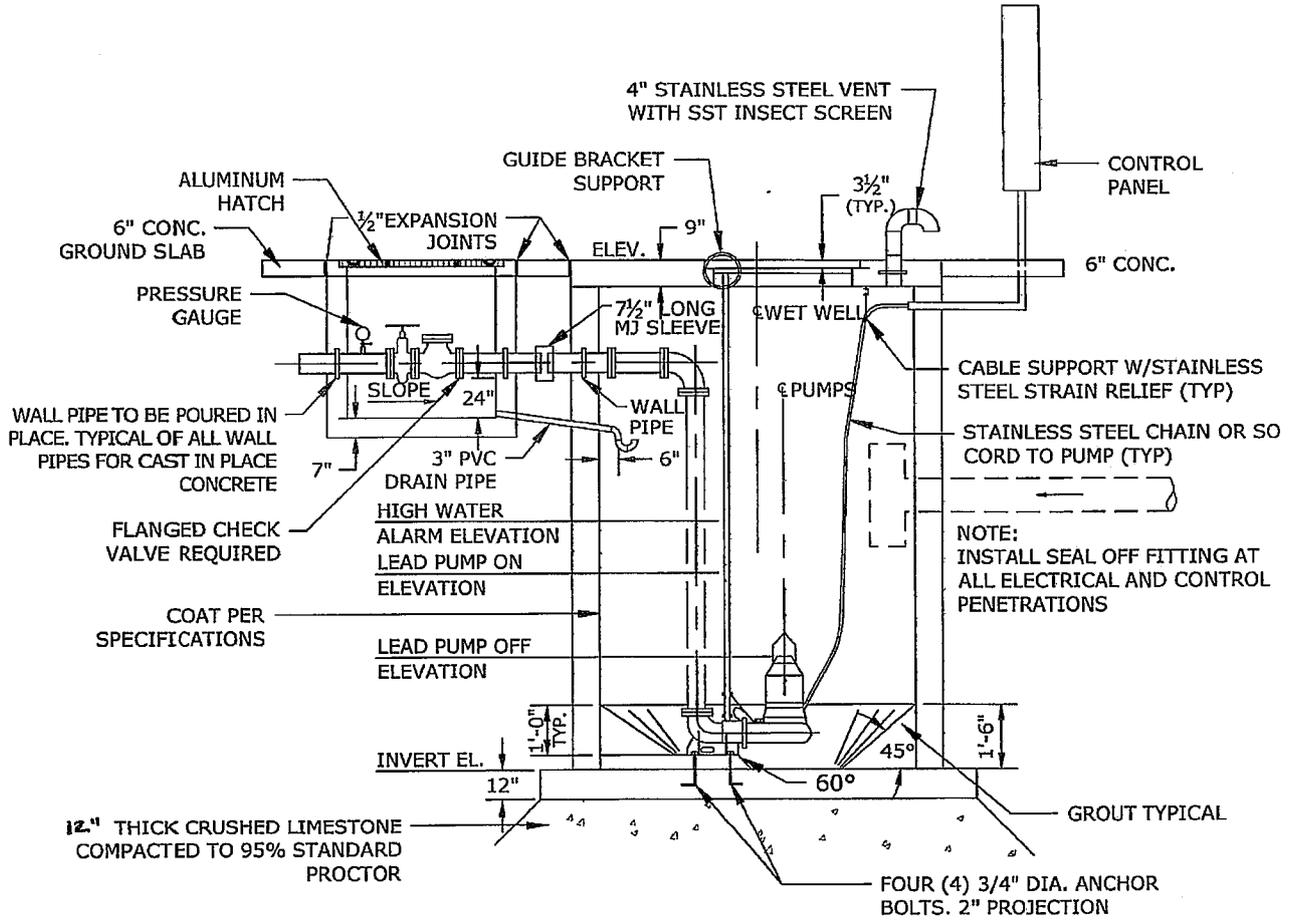
✓ DESIGNATES MACHINED SURFACE

DRAWING DETAILS

ORIGINAL DRAWING: DEW 08/18/05

REVISED BY: JLD 06/30/10

S:\Pascagoula\Projects\2014\1214-034 City of O.S. - Misc Services\001 Public Works\001 City Standards Development\Cheedliat (210-660-057)\Drawings\Current Design\Concept-Design\LIFT STATION PROFILE REV A.dwg, 6/29/2015 6:26:41 PM, mchiles, 1:1

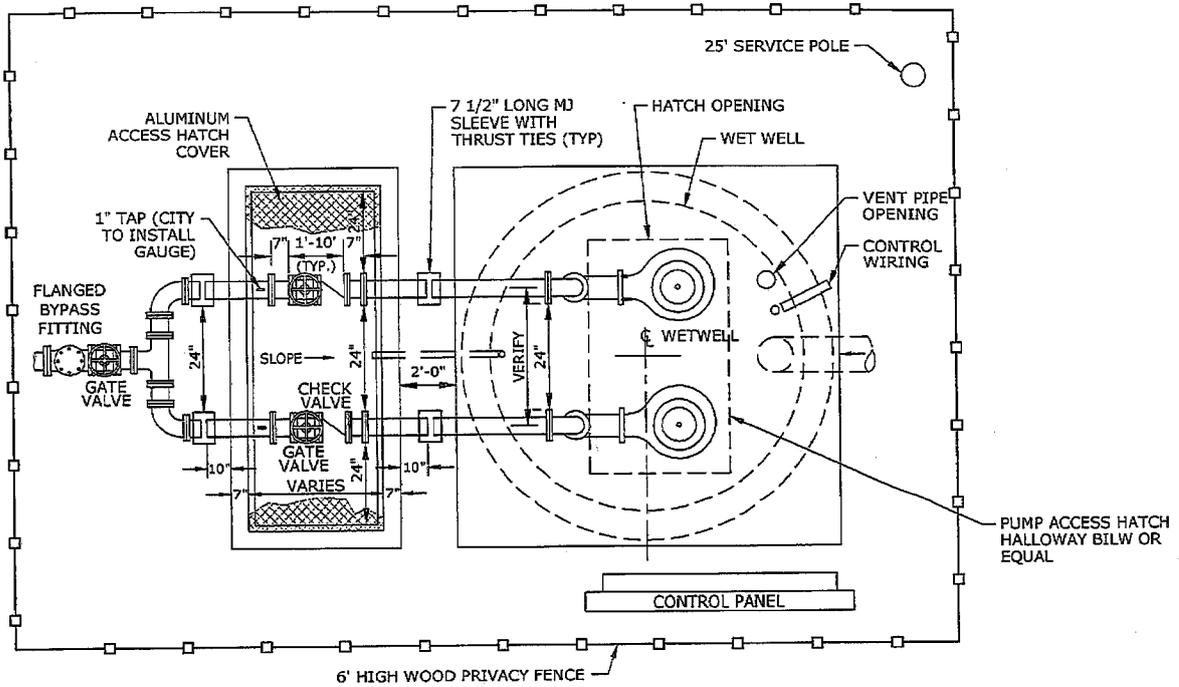


LIFT (PUMP) STATION PROFILE
CITY OF OCEAN SPRINGS - (TYPICAL)
 SCALE: NOT TO SCALE

- NOTES:
1. ALL DIMENSIONS NOTED SHALL BE VERIFIED BY MANUFACTURER.
 2. ALL NUTS AND BOLTS SHALL BE 316 STAINLESS STEEL.

PREPARED BY:  COMPTON ENGINEERING, INC. Engineering, Surveying, and Environmental Services 1706 Convent Avenue Pascagoula, Mississippi 39567 Phone: (228) 762-3970 Fax: (228) 769-9079 E-mail: compton@comptonengineering.com	PREPARED FOR: City of Ocean Springs	DRAWN BY: NMB
	PROJECT TITLE: CITY OF OCEAN SPRINGS - STANDARD DETAILS	DATE DRAWN: JUNE 2015
NORTH ARROW	JOB NUMBER: 214-034.003	SCALE: AS NOTED
	REVISION NUMBER: A	
FIGURE TITLE: LIFT (PUMP) STATION - PROFILE (TYPICAL)		

S:\pascagoula\p-projects\2014\14-034 City of O.S. - Misc Services\001 Public Works\003 City Standards Development Checklist (210-060,057)\Drawings\Current Design\Concept Design\LIFT STATION PLAN REV A.dwg, 7/6/2015 11:38:47 AM, nmb, 1:1



LIFT (PUMP) STATION PLAN
CITY OF OCEAN SPRINGS - (TYPICAL)
 SCALE: NOT TO SCALE

PREPARED BY:



COMPTON ENGINEERING, INC.
 Engineering, Surveying, and Environmental Services
 1706 Convent Avenue
 Pascagoula, Mississippi 39567
 Phone: (228) 762-3970 Fax: (228) 769-9079
 E-mail: compton@comptonengineering.com

PREPARED FOR:

City of Ocean Springs

PROJECT TITLE:

**CITY OF OCEAN SPRINGS -
STANDARD DETAILS**

NORTH ARROW

DRAWN BY:

NMB

DATE DRAWN:

JUNE 2015

JOB NUMBER:

214-034.003

SCALE:

AS NOTED

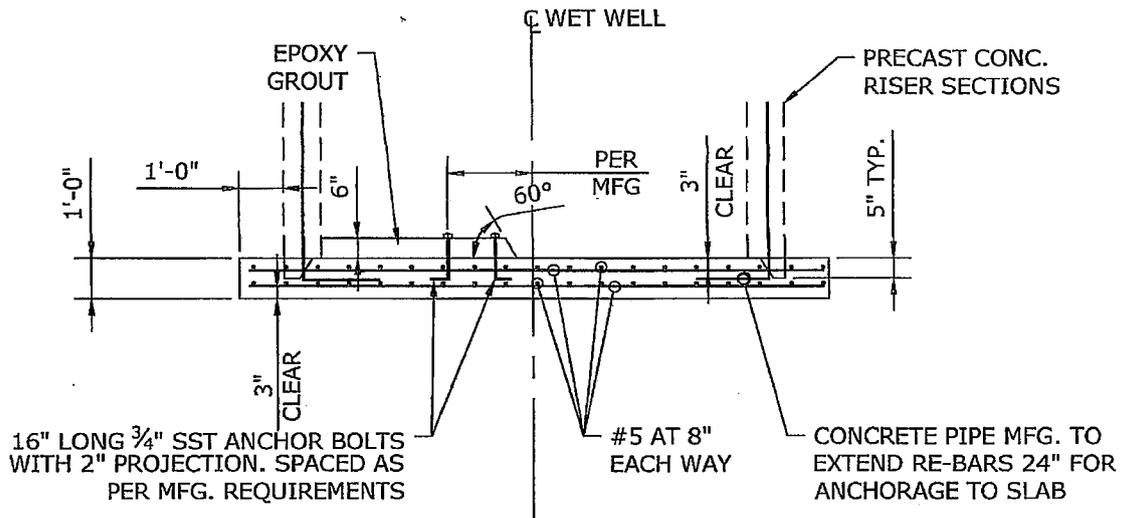
REVISION NUMBER:

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FIGURE TITLE:

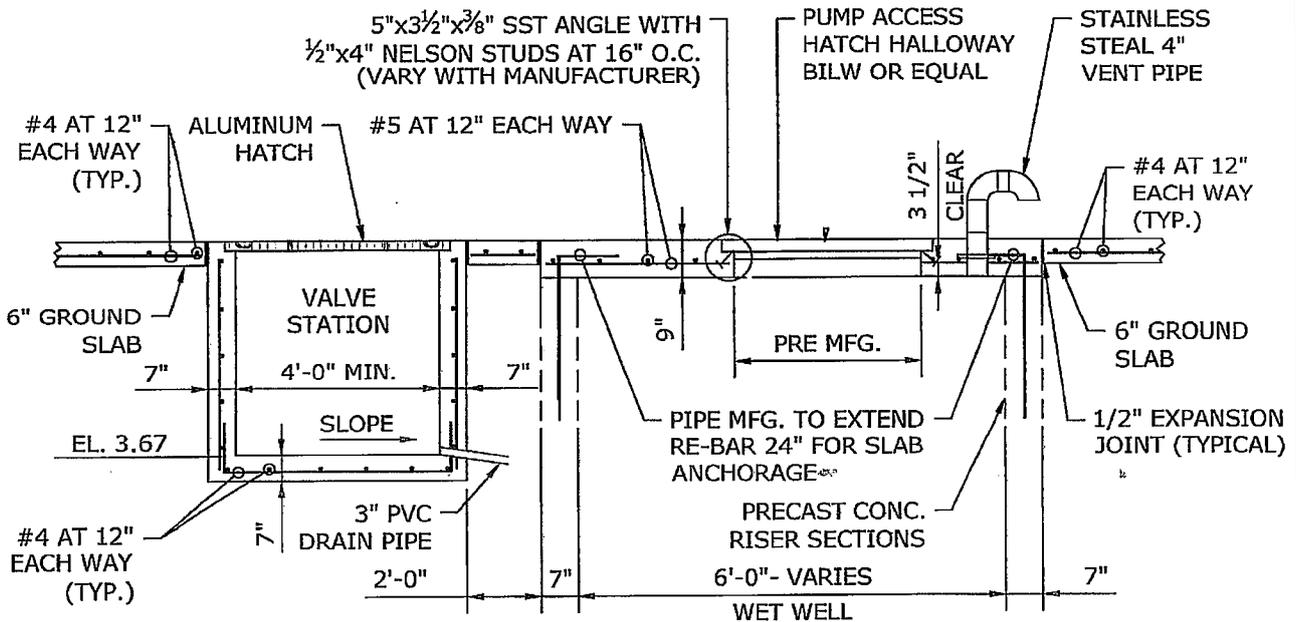
LIFT (PUMP) STATION - PLAN (TYPICAL)

S:\Pascagoula\0-Proj\03\2014\12-14-034 - City of O.S. - Misc Services\001 - Public Works\003 City Standards Development - Chudlist (218-050-057)\Dwgs\Current Design\Concept\Design\VALVE STATION - 0811.RVT.dwg, 10/29/2015 11:59:08 PM, Joseph, 1:1



**WET WELL FOUNDATION SECTION
CITY OF OCEAN SPRINGS - (TYPICAL)**

SCALE: NOT TO SCALE



**VALVE STATION, WET WELL TOP
AND GROUND SLAB SECTION
CITY OF OCEAN SPRINGS - (TYPICAL)**

SCALE: NOT TO SCALE

PREPARED BY:



COMPTON ENGINEERING, INC.
Engineering, Surveying, and Environmental Services
1706 Convent Avenue
Pascagoula, Mississippi 39567
Phone: (228) 762-3970 Fax: (228) 769-9079
E-mail: compton@comptonengineering.com

PREPARED FOR:

City of Ocean Springs

PROJECT TITLE:

CITY OF OCEAN SPRINGS -
STANDARD DETAILS

NORTH ARROW

DRAWN BY:

JDL

DATE DRAWN:

AUGUST 2015

JOB NUMBER:

214-034.003

SCALE:

AS NOTED

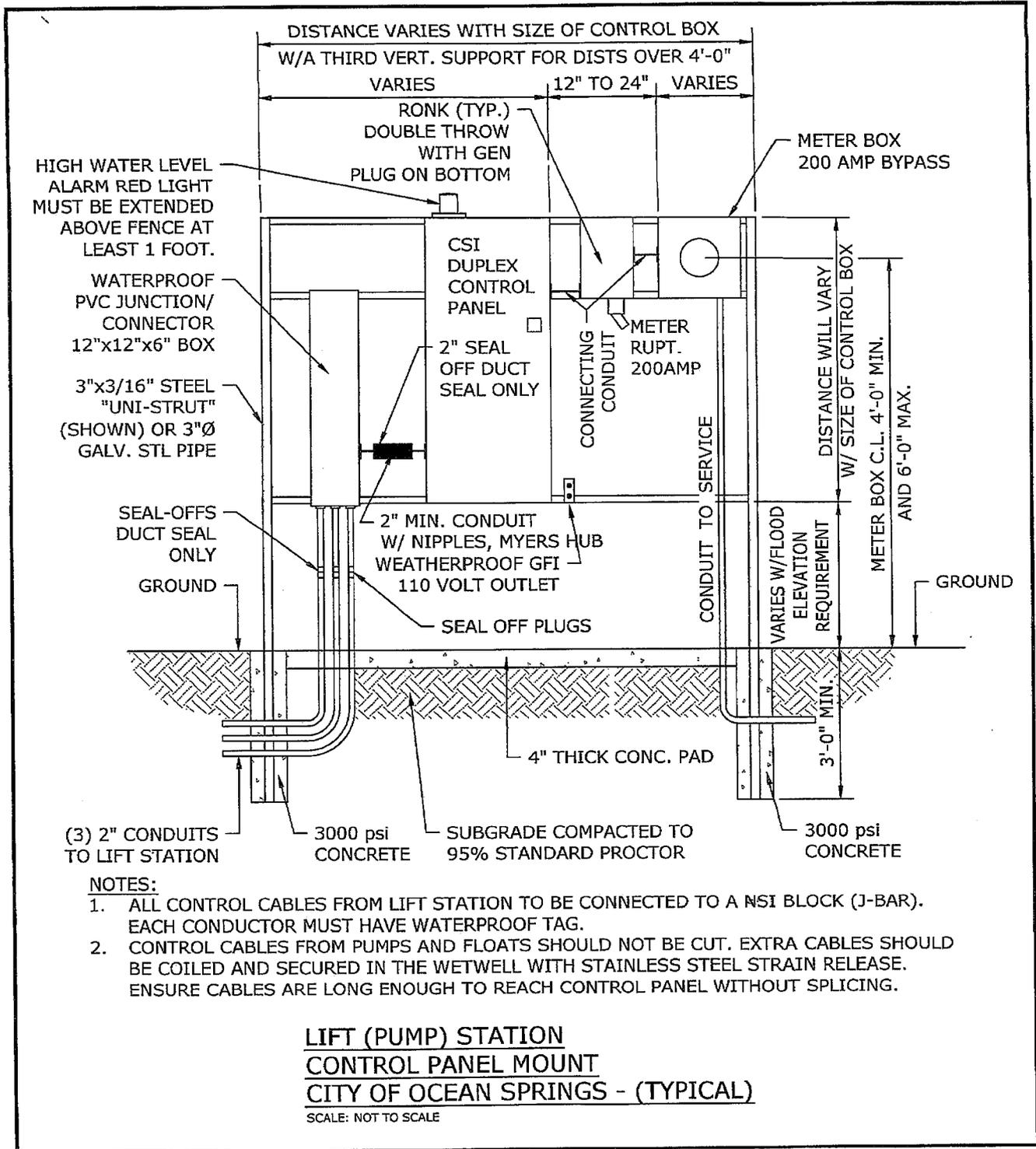
REVISION

NUMBER:

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FIGURE TITLE:

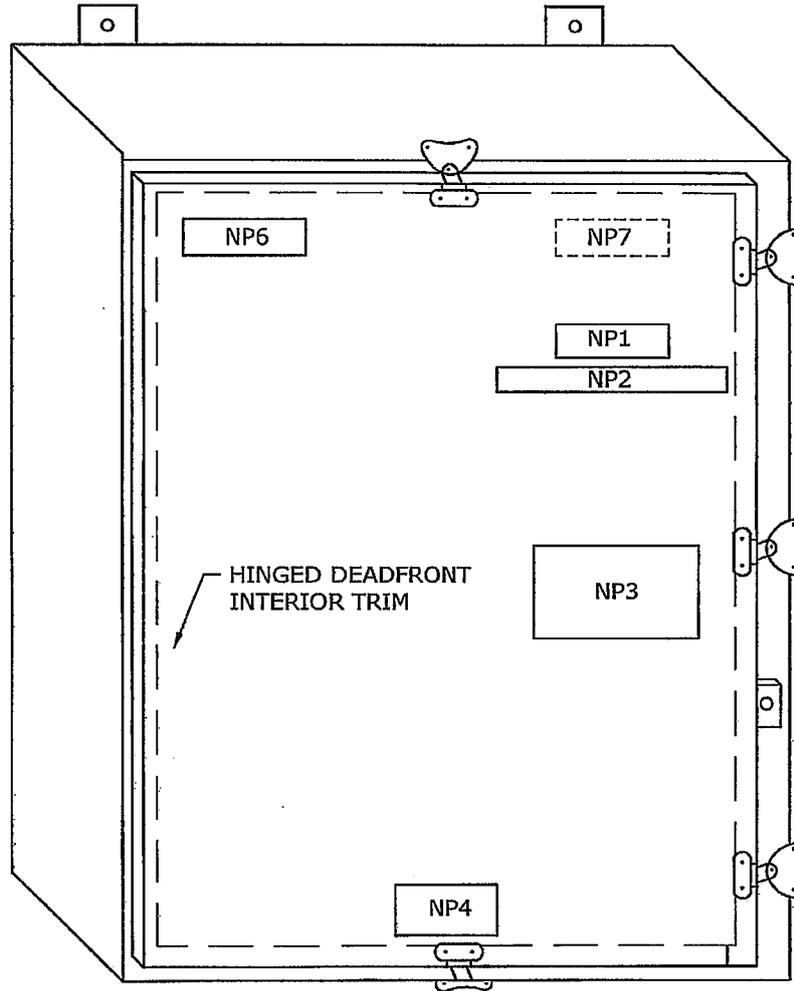
VALVE STATION, WET WELL TOP AND GROUND SLAB - PROFILE (TYPICAL)



PREPARED BY: 	COMPTON ENGINEERING, INC. Engineering, Surveying, and Environmental Services 1706 Convent Avenue Pascagoula, Mississippi 39567 Phone: (228) 762-3970 Fax: (228) 769-9079 E-mail: compton@comptonengineering.com	PREPARED FOR: City of Ocean Springs PROJECT TITLE: CITY OF OCEAN SPRINGS - STANDARD DETAILS NORTH ARROW	DRAWN BY: JDL DATE DRAWN: AUGUST 2015 JOB NUMBER: 214-034.003 SCALE: AS NOTED REVISION NUMBER: A
FIGURE TITLE: LIFT (PUMP) STATION CONTROL PANEL MOUNT - PROFILE (TYPICAL)			

* ALARM LIGHT
SHIPPED INSIDE
CABINET FOR
FIELD MOUNTING

* PUMP STATION POWER
SHALL BE 3 PHASE, 240
VOLT WITH STINGER



NEMA 4X FIBERGLASS ENCLOSURE
(30"Hx24"Wx8"D)
CITY OF OCEAN SPRINGS - (TYPICAL)
SCALE: NOT TO SCALE

PREPARED BY:



COMPTON ENGINEERING, INC.
Engineering, Surveying, and Environmental Services
1706 Convent Avenue
Pascagoula, Mississippi 39567
Phone: (228) 762-3970 Fax: (228) 769-9079
E-mail: compton@comptonengineering.com

PREPARED FOR:

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PROJECT TITLE:

CITY OF OCEAN SPRINGS -
STANDARD DETAILS

NORTH ARROW

DRAWN BY:

JDL

DATE DRAWN:

AUGUST 2015

JOB NUMBER:

214-034.003

SCALE:

AS NOTED

REVISION
NUMBER:

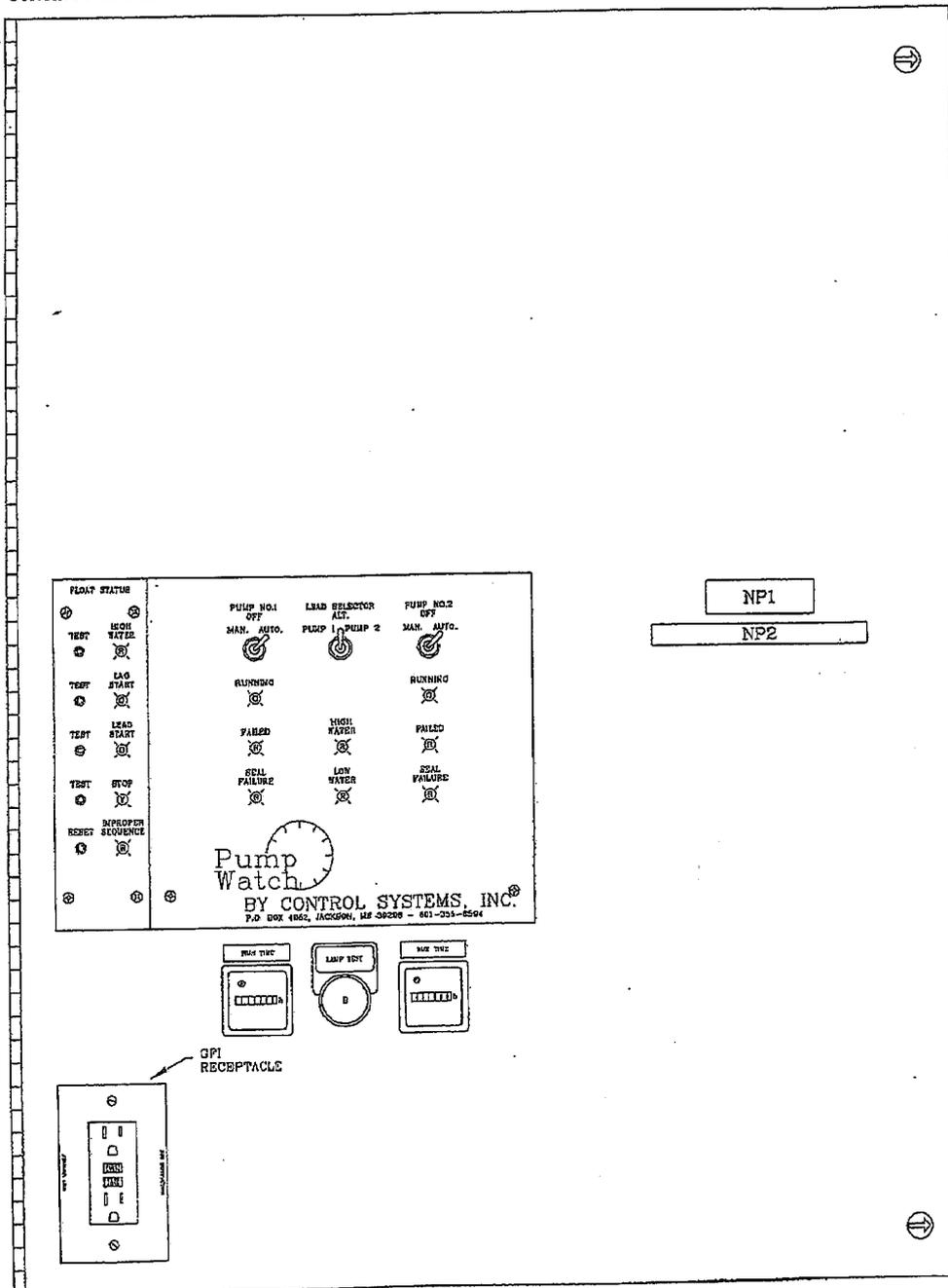
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FIGURE TITLE:

NEMA 4X FIBERGLASS ENCLOSURE - PROFILE (TYPICAL)

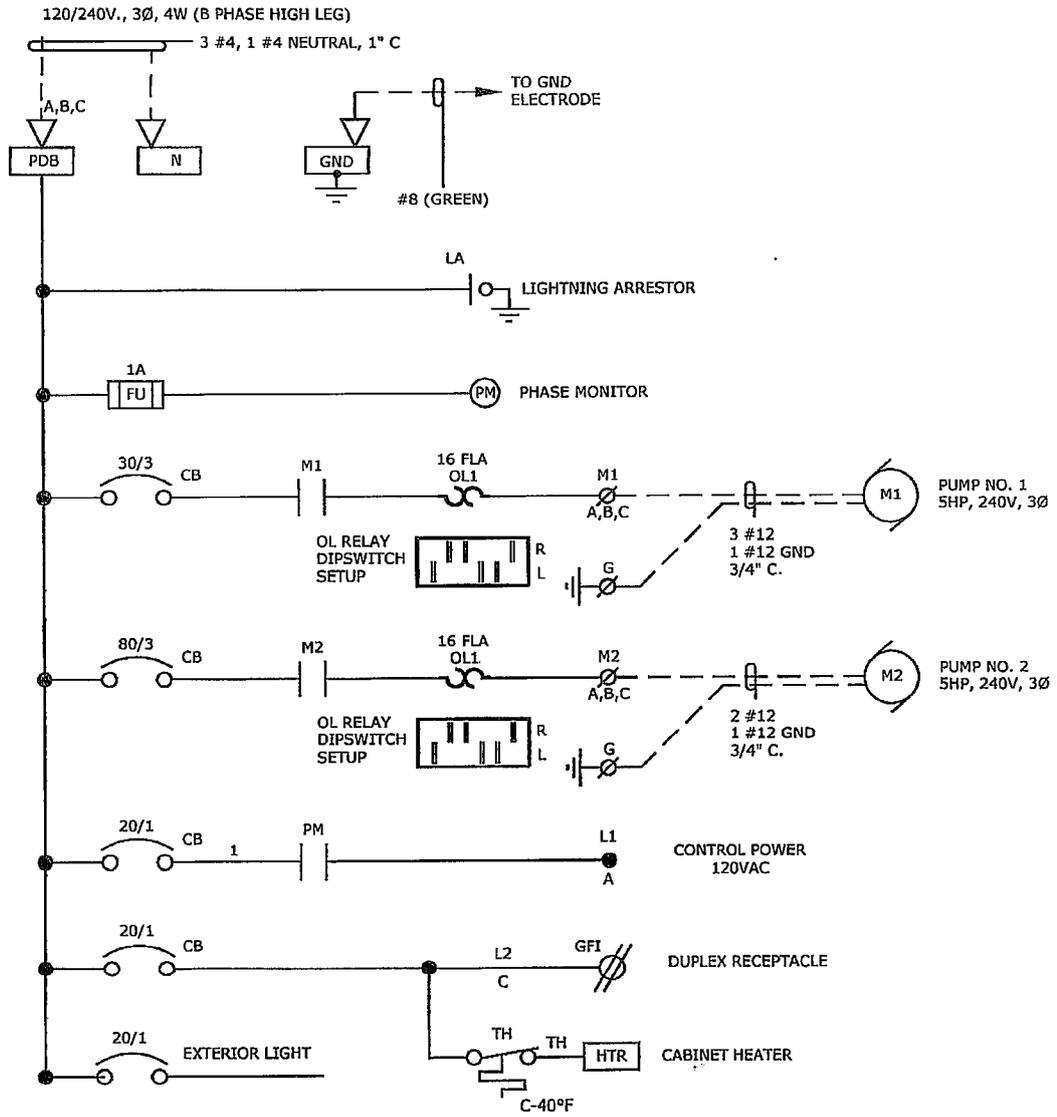
DUPLEX CONTROL PANEL
DEADFRONT DETAIL

CONTINUOUS HINGE



ANODIZED ALUMINUM DEADFRONT

S:\Pascagoula\0-Projects\2014\2014-034 City of O.S. - Misc Services\001 Public Works\003 City Standards Development Checklist (210-050-057)\0mgs\Current Design\Concept-Design\DUPLX CONTROL PANEL 8x11 REV A.dwg, 10/29/2015 4:53:23 PM, jseph, 1:1



**DUPLX CONTROL PANEL
ONE LINE POWER SCHEMATIC
CITY OF OCEAN SPRINGS - (TYPICAL)**

SCALE: NOT TO SCALE

PREPARED BY:



COMPTON ENGINEERING, INC.

Engineering, Surveying, and Environmental Services

1706 Convent Avenue
Pascagoula, Mississippi 39567

Phone: (228) 762-3970 Fax: (228) 769-9079
E-mail: compton@comptonengineering.com

PREPARED FOR:

City of Ocean Springs

PROJECT TITLE:

CITY OF OCEAN SPRINGS -
STANDARD DETAILS

NORTH ARROW

DRAWN BY:

JDL

DATE DRAWN:

AUGUST 2015

JOB NUMBER:

214-034.003

SCALE:

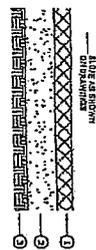
AS NOTED

REVISION NUMBER:

A

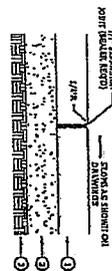
FIGURE TITLE:

DUPLX CONTROL PANEL ONE LINE POWER SCHEMATIC - PROFILE (TYPICAL)



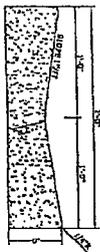
- 1 2 1/2" TEMPORARY ASPHALT SURFACE COURSE (20% 1/2" 1/2")
- 2 2" 1/2" ASPHALT CONCRETE (CONTACT TO 95% MOISTURE)
- 3 1" 1/2" ASPHALT CONCRETE (CONTACT TO 95% MOISTURE)

ASPHALT PAVING TYPICAL SECTION

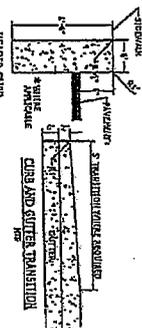


- 1 4" 1/2" CONCRETE (CONTACT TO 95% MOISTURE)
- 2 2" 1/2" CONCRETE (CONTACT TO 95% MOISTURE)
- 3 2" 1/2" CONCRETE (CONTACT TO 95% MOISTURE)

CONCRETE PAVING TYPICAL SECTION

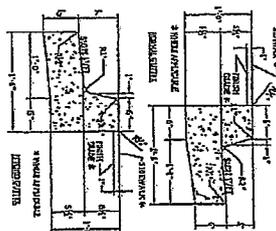


CONCRETE VALLEY GUTTER

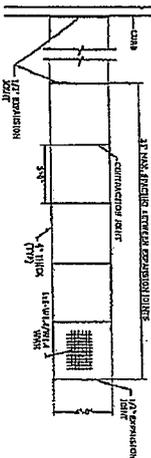
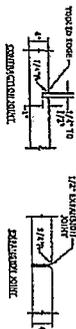


- 1 2" 1/2" CONCRETE CURB SHALL BE FINISHED TO THE TOP OF CURB AND GUTTER SHALL BE FINISHED TO THE TOP OF CURB.
- 2 1/2" 1/2" CONCRETE CURB SHALL BE FINISHED TO THE TOP OF CURB AND GUTTER SHALL BE FINISHED TO THE TOP OF CURB.

COMBINATION CONCRETE CURB AND GUTTER AND HEADER CURB



CONCRETE SIDEWALK STANDARD



CONCRETE SIDEWALK STANDARD

SCALE	NOTE
AS NOTED	
DATE	2002
DESIGNER	B. SWENSON
CHECKER	
APPROVED	

City of Ocean Springs
Standard Details
Civil Details



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