

NOTES:

- RUN 6 #8, #8G 2" C FROM EXISTING 480V 3Ø PANEL TO NEW HAND HOLE HH-1. CONDUIT SHALL BE RUN EXPOSED INSIDE BUILDING AND ALONG BUILDING EXTERIOR WALL AS SHOWN.
- TURN DOWN AND RUN UNDERGROUND TO HAND HOLE HH-1.
- RUN 3 #8, #8G, 2" C FROM HAND HOLE HH-1, ALONG WALKWAY TO CLARIFIER No.1 480V JUNCTION BOX. REFERENCE ONE LINE DIAGRAM FOR WIRING FROM JUNCTION BOX TO ELECTRICAL EQUIPMENT.
- RUN 3 #8, #8G, 2" C FROM HAND HOLE HH-1 TO HANDHOLE HH-2. CONTINUE UNDERGROUND FROM HH-2 TO CLARIFIER No.2, THEN RUN ALONG WALKWAY TO CLARIFIER No.2 480V JUNCTION BOX. REFERENCE ONE LINE DIAGRAM FOR WIRING FROM JUNCTION BOX TO ELECTRICAL EQUIPMENT.
- RUN 4 #12, #12G, 3/4" C FROM EXISTING 120V J-BOX TO NEW WALKWAY ON CLARIFIER No.1. CONDUIT SHALL BE RUN EXPOSED ALONG CLARIFIER WALL. CONTINUE CONDUIT ALONG WALKWAY TO LIGHTS AS RECEPTACLES AS SHOWN.
- FURNISH AND INSTALL LIGHT SWITCH IN FS BOX W/ WEATHERPROOF COVER AND PHOTOCELL AT WALKWAY STAIRS.

ELECTRICAL SITE & PLAN SYMBOL LEGEND

SYMBOL	DESCRIPTION
⊙	LIGHT FIXTURE - LETTER DENOTES FIXTURE TYPE
—	EXPOSED CONDUIT RUN
---	CONCEALED OR UNDERGROUND CONDUIT RUN
→	CIRCUIT HOME RUN TO PANELBOARD
S	WALL SWITCH, SPST
⊙ WP	DUPLEX RPT & GFCI DEVICE MOUNTED IN WEATHERPROOF BOX & COVERS
⊙	MOTOR LOCATION
⊠	COMBINATION FUSED DISCONNECT SW./ MAGNETIC MOTOR STARTER
⊠	MAGNETIC MOTOR STARTER
⊠	DISCONNECT SWITCH - HEAVY DUTY TYPE
⊠	CONTACTOR
HH	HAND HOLE
CS	CONTROL STATION. REF CONTROL SCHEMATICS FOR TYPE.
—OHE—	OVERHEAD ELECTRICAL LINES
WP	WEATHERPROOF
GFI	GROUND FAULT INTERRUPTER
E.C.	EMPTY CONDUIT
1122	CONDUIT AND CABLE TAG NUMBER. REF SCHEDULE
■	480/277V PANELBOARD
■	208/120V PANELBOARD

ELECTRICAL SPECIFICATIONS:

- FURNISH ALL WORK, LABOR, TOOLS, SUPERINTENDENCE, MATERIAL, EQUIPMENT AND OPERATIONS NECESSARY TO PROVIDE A COMPLETE AND WORKABLE ELECTRICAL SYSTEM.
- EXPOSED CONDUIT SHALL BE RIGID ALUMINUM WITH THREADED FITTINGS.
- UNDERGROUND CONDUIT SHALL BE SCHEDULE 40 PVC.
- CONDUIT SUPPORTS SHALL BE CAST METAL WITH 1/2" SPACERS "NEST BACK" TYPE WITH STAINLESS STEEL ANCHORS. FURNISH CROUSE-HINDS OR EQUAL.
- FITTINGS SHALL BE CAST ALUMINUM, CROUSE-HINDS OR EQUAL.
- WIRING SHALL BE COPPER CONDUCTOR WITH XHHW-2 INSULATION AS MANUFACTURED BY SOUTHWIRE OR APPROVED EQUAL.
- PROVIDE SUBMITTALS TO ENGINEER FOR REVIEW:
  - CONDUIT & FITTINGS
  - WIRE & CABLE
  - LIGHT FIXTURES
- INSTALLATION SHALL COMPLY WITH LATEST EDITION OF NATIONAL ELECTRIC CODE.
- SECURE ALL PERMITS, LICENSES, AND INSPECTION AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION.
- PROVIDE SET OF MARKED UP PLANS SHOWING ALL DEVIATIONS FROM THE ELECTRICAL PLANS.

Z:\03.164\Drawings\Electrical\E-01 Electrical Site Plan.DWG - E-01 Electrical Site Plan

NO.	DATE	REVISION	BY

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KPA Firm Registration Number F-510

Plot Date: Mar 27, 2017 - 5:06pm  
Plotted By: RICHARD

PROJECT NO. 2016-109  
 DRAWN BY RICHARD E. BRADY  
 DESIGNED BY JOSEPH J. KOTRLA  
 APPROVED BY *Joseph Kotrla*  
 DATE 3-27-2017 FIRM No. F-338

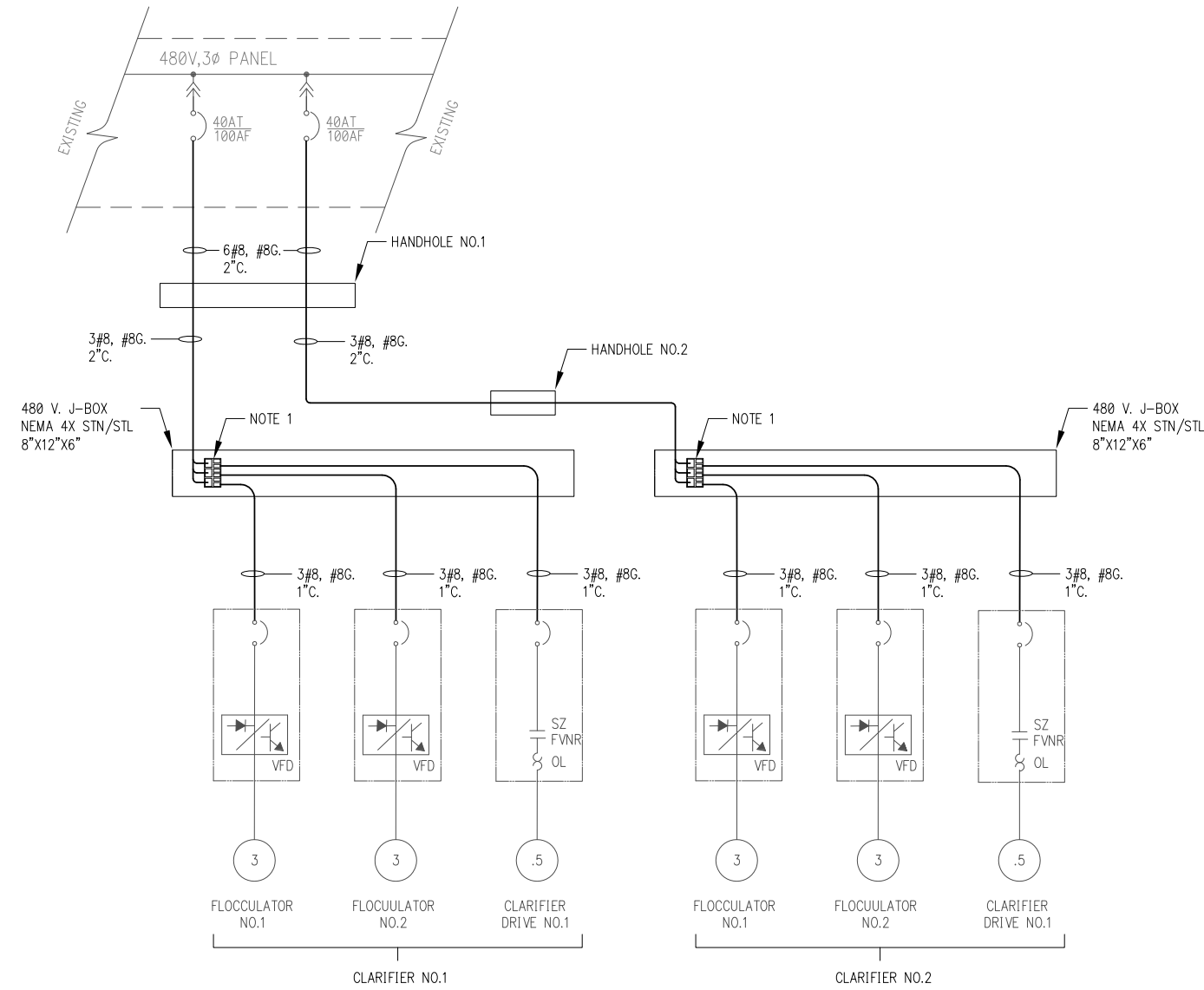


**KASBERG, PATRICK & ASSOCIATES, LP**  
 CONSULTING ENGINEERS  
 TEMPLE, TEXAS 76501

**CITY OF CAMERON, TEXAS**  
 WATER TREATMENT PLANT  
 CLARIFIER REHABILITATION  
 ELECTRICAL SITE PLAN

SHEET NO. **E-1**  
 OF **3**

ONE LINE DIAGRAM LEGEND	
SYMBOL	DESCRIPTION
	POWER TRANSFORMER
	CURRENT TRANSFORMER
	CONTROL POWER (CPT) OR POTENTIAL (PT) TRANSFORMER
	THERMAL MAGNETIC CIRCUIT BREAKER; AF=FRAME SIZE, AT=AMP TRIP
	MAGNETIC ONLY CIRCUIT BREAKER; NUMBER INDICATES CONTINUOUS CURRENT RATING
	STAB-IN CONNECTION, NUMBER INDICATES MCC UNIT DESIGNATION
	FUSE
	FUSED SWITCH
	FULL VOLTAGE, NON-REVERSING STARTER, WITH OVERLOAD RELAY, NUMBER INDICATES NEMA SIZE
	CONNECTION TO GROUND
	SPACE HEATER
	SOLID NEUTRAL
	DELTA CONNECTED TRANSFORMER WINDINGS
	WYE CONNECTED TRANSFORMER WINDINGS
	LIGHTNING ARRESTER
	SURGE CAPACITOR
	VOLTMETER SWITCH
	VOLTMETER
	AMMETER SWITCH
	AMMETER

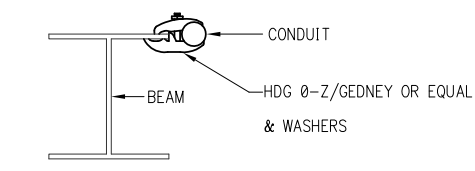


NOTES:  
 1. PROVIDE ILSCO MODEL #PDB-16-2/0-3 FOR PHASE WIRES AND ILSCO MODEL #PDB-11-2/0-1 FOR GROUND WIRES. BOND GROUND WIRE TO WIREWAY.

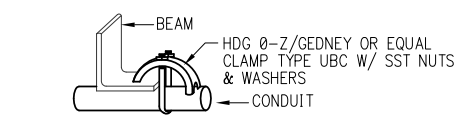
**ONE LINE DIAGRAM**

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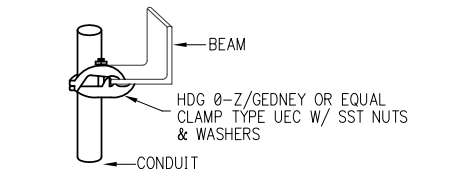
NO.	DATE	REVISION	BY	PROJECT NO. 2016-109			<b>KASBERG, PATRICK &amp; ASSOCIATES, LP</b> CONSULTING ENGINEERS TEMPLE, TEXAS 76501		
				DRAWN BY RICHARD E. BRADY				<b>CITY OF CAMERON, TEXAS</b> WATER TREATMENT PLANT CLARIFIER REHABILITATION	SHEET NO. <b>E-2</b>
				DESIGNED BY JOSEPH J. KOTRLA					OF <b>3</b>
				APPROVED BY <i>Joseph Kotrla</i>					ELECTRICAL ONE LINE DIAGRAM
© 2017 Kasberg, Patrick & Associates, LP KPA Firm Registration Number F-510				Plot Date: Mar 27, 2017 - 5:07pm Plotted By: RICHARD	DATE 3-27-2017	FIRM No. F-338			



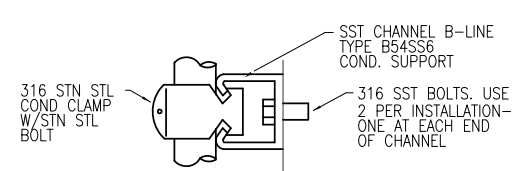
**101 TYPICAL CONDUIT SUPPORT DETAILS**  
NOT TO SCALE



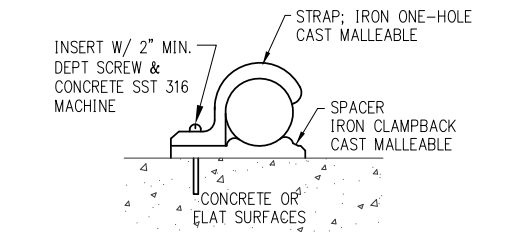
**102 TYPICAL CONDUIT SUPPORT ON CONCRETE STRUCTURES**  
NOT TO SCALE



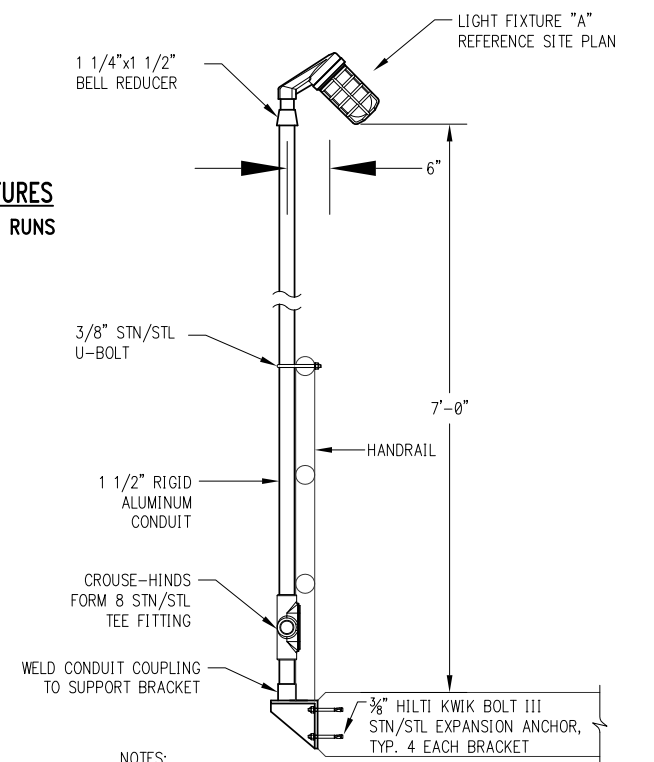
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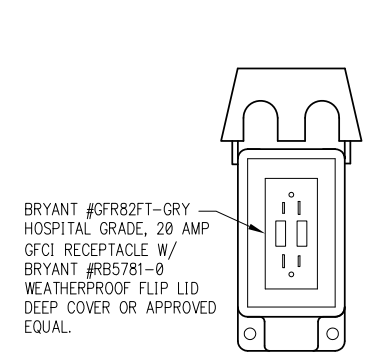
**104 TYPICAL CONDUIT SUPPORT ON CONCRETE STRUCTURES**  
NOT TO SCALE



**105 TYPICAL CONDUIT SUPPORT**  
NOT TO SCALE

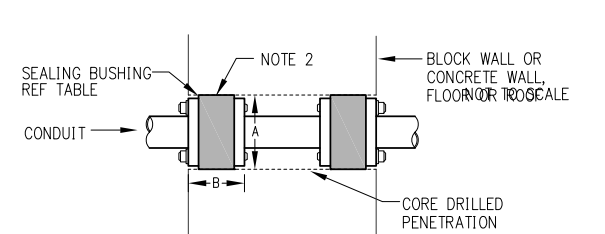


**106 HANDRAIL MOUNTED WALKWAY LIGHT FIXTURE**  
NOT TO SCALE



- NOTES:
- FLIP LID SHOWN HELD OPEN
  - ATTACH TO WALL WITH 1/4" 304 STN/STL BOLT INTO DRILLED EXPANSION SHIELD. ATTACH TO STANCHION OR METAL PLATE WITH 1/4" 304 STN/STL BOLTS, WASHERS & NUTS.
  - COVERS SHALL BE SUITABLE FOR WET LOCATIONS & SHALL BE GASKETED.
  - COVER WITH PLUG CAP INSERTED SHALL CARRY UL WET-OR-DAMP LOCATION LISTING.
  - PROVIDE ONE ASSEMBLY FOR EACH WP/GFCI LOCATION.

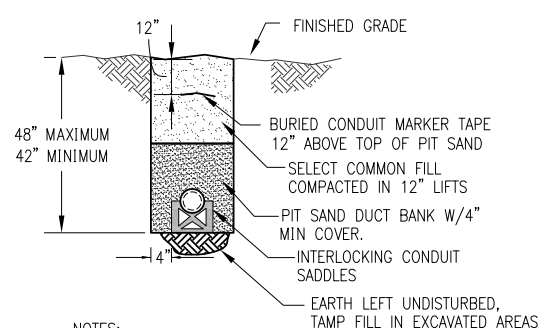
**107 TYPICAL WP/GFCI DEVICE**  
NOT TO SCALE



- NOTES:
- TYPICAL FOR NEW PENETRATIONS OF EXISTING WALLS, ROOFS & FLOORS.
  - CAULK ALL AROUND WITH SILICONE SEALANT PRIOR TO INSTALLING BUSHING
  - REPAIR ALL DAMAGE DONE BY CORE DRILL.

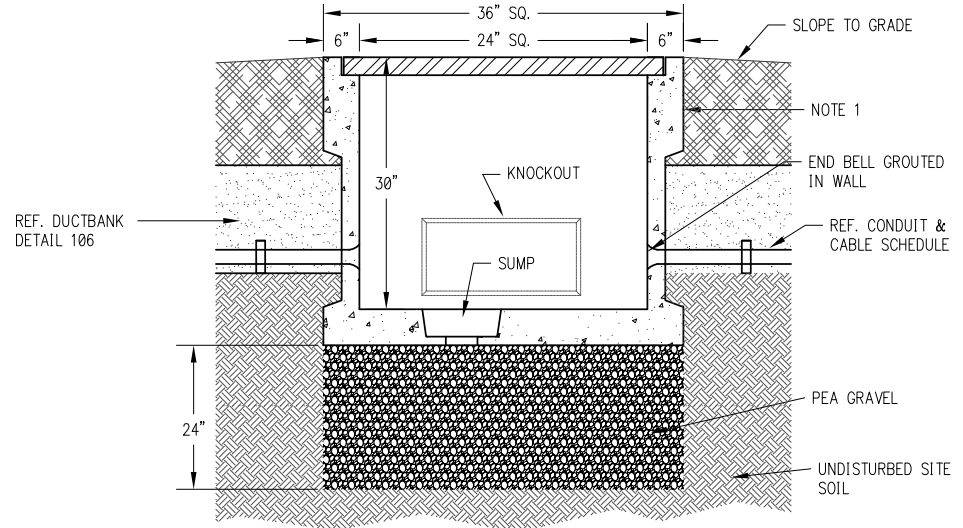
CONDUIT NOM. I.D.	CORE DRILLED HOLE DIA. "A"	"B"	O-Z GEDNEY CATALOG #
3/4"	2"	1 5/8"	CSMI-200P
1"	2 1/2"	1 5/8"	CSMI-250P
1 1/2"-1 3/4"	3"	1 5/8"	CSMI-300P
2"	4"	1 7/8"	CSMI-400P
2 1/2"-3"	5"	1 7/8"	CSMI-500P
3 1/2"-4"	6"	1 7/8"	CSMI-600P

**108 WATERTIGHT CONDUIT PENETRATION**  
NOT TO SCALE



- NOTES:
- NUMBER AND SIZE OF CONDUITS SHALL BE AS SHOWN ON THE PLANS.
  - TOP OF PIT SAND ENCASEMENT SHALL BE A MINIMUM OF 24" FROM FINISHED GRADE.

**109 DETAIL - UNDERGROUND DUCTBANK**  
NOT TO SCALE



- NOTES:
- PROVIDE OLDCASTLE PRECAST 24"x24" I.D. CONCRETE PULL BOX #2X2 EPB WITH H20 LOAD RATED HINGED COVER. CONCRETE SHALL HAVE A DESIGN STRENGTH OF 5,000 PSI @ 28 DAYS AND BODY SHALL BE BE DESIGNED FOR H20 LOADING. STEEL REINFORCEMENT: ASTM A-615, GRADE 60.

**110 ELECTRICAL HANDHOLE**  
NOT TO SCALE

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Plot Date: Mar 27, 2017 - 5:08pm  
Plotted By: RICHARD

PROJECT NO. 2016-109

DRAWN BY RICHARD E. BRADY

DESIGNED BY JOSEPH J. KOTRLA

APPROVED BY *Joseph Kotrla*

DATE 3-27-2017 FIRM No. F-338



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WATER TREATMENT PLANT  
CLARIFIER REHABILITATION  
ELECTRICAL DETAILS

SHEET NO. **E-3**  
OF **3**