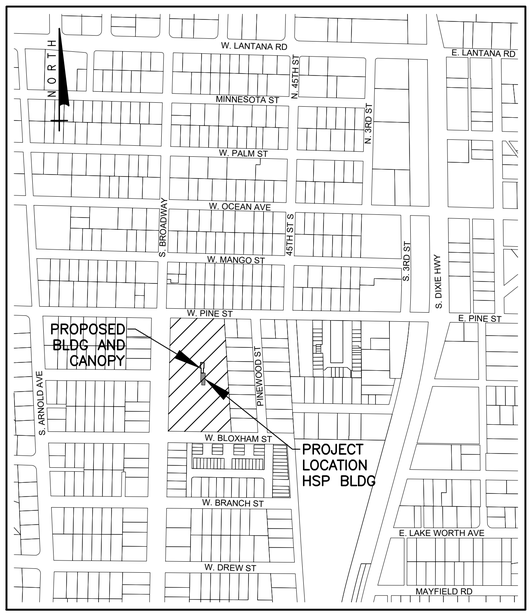
TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

BID SET

APRIL 2020



CITY OF LANTANA WATER TREATMENT PLANT

SECTION 03, TOWNSHIP 45 SOUTH, RANGE 43 EAST

LOCATION MAP
NTS

TOWN COUNCIL

MAYOR	–	DAVID J. STEWART
VICE MAYOR	–	MALCOLM BALFOUR
COUNCIL MEMBER	–	PHILIP ARIDAS
COUNCIL MEMBER	–	EDWARD PAUL SHROPSHIRE
COUNCIL MEMBER	–	LYNN MOORHOUSE, D.D.S.
TOWN MANAGER	–	DEBORAH MANZO
DIRECTOR OF OPERATIONS	–	EDDIE CROCKETT
ASSISTANT UTILITIES DIRECTOR	–	JERRY L. DARR

DRAWING LIST

SHEET	DRAWING	TITLE
		GENERAL
1	G–1	TITLE SHEET, LOCATION MAP AND DRAWING LIST
2	G–2	GENERAL NOTES AND SURVEY INFORMATION, LEGEND AND NOTES
3	G–3	EXISTING SURVEY
		CIVIL
4	C–1	EXISTING SITE PLAN
5	C–2	DEMOLITION SITE PLAN
6	C–3	PROPOSED SITE PLAN
		DETAILS
7	D–1	STANDARD DETAILS
		MECHANICAL
8	M–1	EXISTING HIGH SERVICE PUMP BUILDING
9	M–2	DEMOLITION HIGH SERVICE PUMP BUILDING
10	M–3	PROPOSED HIGH SERVICE PUMP BUILDING
11	M–4	PROPOSED HIGH SERVICE PUMP BUILDING ALTERNATIVES 1 AND 2
12	M–5	MECHANICAL DETAILS

SHEET	DRAWING	TITLE
		STRUCTURAL
13	S–1	GENERAL NOTES
14	S–2	MASONRY SCHEDULE
15	S–3	MASONRY WALL DETAILS
16	S–4	MASONRY WALL DETAILS
17	S–5	WIND LOAD DATA
18	S–6	ELECTRICAL BUILDING SITE PLAN
19	S–7	ELECTRICAL BUILDING FOUNDATION FLOOR PLAN
20	S–8	ELECTRICAL BUILDING ROOF PLAN
21	S–9	ELECTRICAL BUILDING ELEVATIONS
22	S–10	ELECTRICAL BUILDING ELEVATIONS
23	S–11	ELECTRICAL BUILDING DETAILS
24	S–12	ELECTRICAL BUILDING DETAILS
25	S–13	WALKWAY FOUNDATION PLAN
		HVAC
26	H–1	HVAC SCHEDULES, DETAILS + NOTES
27	H–2	HVAC SPECIFICATIONS AND DETAILS
28	H–3	ELECTRICAL BUILDING HVAC PLAN
		ELECTRICAL
29	E–1	ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS
30	E–2	LOCATION MAP
31	E–3	ELECTRICAL DEMOLITION SITE PLAN
32	E–4	ELECTRICAL SITE PLAN
33	E–5	DEMOLITION SINGLE LINE DIAGRAM
34	E–6	PROPOSED SINGLE LINE DIAGRAM
35	E–7	ELEMENTARY DIAGRAM
36	E–8	EXISTING HIGH SERVICE PUMP BUILDING ELECTRICAL DEMOLITION PLAN
37	E–9	EXISTING HIGH SERVICE PUMP BUILDING ELECTRICAL PLAN
38	E–10	EQUIPMENT FRONT VIEWS
39	E–11	ELECTRICAL DEMOLITION DETAILS
40	E–12	ELECTRICAL BUILDING ELECTRICAL PLANS
41	E–13	ELECTRICAL DETAILS

FOR INFORMATION REGARDING THIS PROJECT, CONTACT:

SIRA J. PRINYAVIVATKUL, P.E.

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WEST PALM BEACH, FL 33401
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SIRA J. PRINYAVIVATKUL, P.E.
No. 64655

TITLE SHEET, LOCATION MAP AND DRAWING LIST

SHEET: 1 of 41

DRAWING: G–1

Acad Version : R22.0s (LMS Tech) User Name : 793hn Date\Time : Thu, 23 Apr 2020 - 6:56pm Path\Name : C:\Users\793HN\Documents\VHN Projects\VMTF 18-052-High Service Pump Imp\18052SC_G01.dwg Current Plotstyle : ByColor Layout Tab: G-1

GENERAL NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF TOWN OF LANTANA AND NATIONAL BUILDING CODES WHERE APPLICABLE.
2. ALL CONSTRUCTION SHALL BE DONE IN A SAFE MANNER, SPECIFICALLY, THE RULES AND REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES SHALL BE STRICTLY OBSERVED.
3. CONTRACTOR SHALL MAINTAIN ACCESS TO PRIVATE PROPERTY AT ALL TIMES.
4. LOCATIONS OF EXISTING FACILITIES AS SHOWN ON CONSTRUCTION DRAWINGS ARE APPROXIMATE AND ARE DRAWN FROM AVAILABLE RECORDS. THE TOWN AND THEIR CONSULTANTS ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE FACILITIES SHOWN NOR FOR ANY FACILITY NOT SHOWN. THE CONTRACTOR SHALL LOCATE OR EXPOSE ALL UTILITIES WITHIN THE PROPOSED WORK AREAS AND AT CRITICAL LOCATIONS TO VERIFY UTILITY LOCATIONS.
5. CONTRACTOR SHALL OBTAIN THE SERVICES OF SUNSHINE STATE ONE CALL OF FLORIDA, INC. AS REQUIRED BY FLORIDA STATUTES (1-800-432-4770).
6. ALL DELETERIOUS MATERIAL SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR AT HIS EXPENSE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE TO ANY EXISTING UTILITIES.
8. ALL OPEN TRENCHES AND HOLES SHALL BE PROPERLY MARKED AND BARRICADED TO ASSURE THE SAFETY OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC.
9. CONTRACTOR SHALL UTILIZE BEST CONSTRUCTION METHODS AND DEVICES AS INDICATED IN FDOT INDEX 100 THRU 105 WHERE NECESSARY IN ORDER TO COMPLY WITH ALL STATE, LOCAL AND NPDES WATER QUALITY STANDARDS.
10. PROJECT SITE SAFETY:
    - A. THE ENGINEER/OWNER OR THEIR EMPLOYEES HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER THE CONTRACTOR, ANY SUB-CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY JOB SITE HEALTH OR SAFETY PRECAUTIONS.
    - B. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SITE SAFETY, AND WARRANTS THAT THIS INTENT IS MADE EVIDENT BY THE AGREEMENT BETWEEN OWNER AND CONTRACTOR.
    - C. ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS OR ENCOUNTERED THROUGH THE PROGRESSION OF WORK AT THIS PROJECT SITE ARE ASSUMED TO BE LIVE, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS WHEN WORKING AROUND EXISTING OVERHEAD OR UNDERGROUND UTILITIES.

1. AT&T TELEPHONE, FLORIDA POWER AND LIGHT, CABLE TV, GAS, ETC. ARE TAKEN FROM FIELD INSPECTIONS AND SKETCHES PROVIDED BY UTILITIES AND ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL CONTACT ALL UTILITY OWNERS AND CONFIRM LOCATIONS OF UTILITIES NO LESS THAN 48 HOURS BEFORE BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL ACCURATELY LOCATE AND UNCOVER ALL EXISTING UTILITIES BEFORE BEGINNING CONSTRUCTION WHERE CROSSING OR PARALLELING OF EXISTING UTILITIES OCCUR. ANY DAMAGE RESULTING FROM THE CONTRACTORS OPERATION SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE.

CONSTRUCTION SEQUENCE

1. WATER DISTRIBUTION SHALL BE MAINTAINED AT ALL TIMES BY BYPASS PUMPING OPERATIONS TO BE PROVIDED BY THE CONTRACTOR.

EROSION CONTROL NOTES:

1. ALL EXISTING & PROPOSED STORM SEWER INLET GRATES TO BE COVERED WITH FILTER FABRIC DURING CONSTRUCTION.
2. CUT AND FILL SLOPES TO BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SILT FENCES TO BE USED WHERE NECESSARY.
3. CONSTRUCTION VEHICLE ACCESS ROUTES SHALL BE SWEPT CLEAN OF SEDIMENT, CONCRETE AND OTHER CONSTRUCTION MATERIALS AS NEEDED.
4. ALL BERMS, DIKES AND SPOIL PILES SUBJECT TO EROSION MUST BE STABILIZED OR CONTAINED TO PREVENT EROSION AND RUNOFF FROM THE PROJECT.

ABBREVIATIONS

BLDG	BUILDING
B.M.	BENCHMARK
℄	CENTERLINE
CONC.	CONCRETE
DIP	DUCTILE IRON PIPE
EL. OR EL	ELEVATION
F.F.	FINISH FLOOR
GV	GATE VALVE
NGVD	NATIONAL GEODETIC VERTICAL DATUM
TYP	TYPICAL
X 17.52	EXISTING ELEVATION (NGVD 29)

REPORT OF SURVEY:

1. THE SURVEY DEPICTED HEREON HAS BEEN CLASSIFIED AS A TOPOGRAPHIC SURVEY, PERFORMED IN NOVEMBER 2004 AND SHOWN ON "RECORD DRAWINGS" PREPARED BY MATHEWS CONSULTING. NO CURRENT SURVEY WAS PERFORMED ON SUBJECT PROPERTY.
2. THIS SURVEY DOES NOT ADDRESS ENVIRONMENTAL MATTERS, JURISDICTIONAL BOUNDARIES OR HAZARDOUS WASTE CONCERNS SHOULD ANY OF THE FOREGOING EXIST.
3. THIS IS NOT A BOUNDARY SURVEY
4. THE ELEVATIONS SHOWN HEREON ARE FOR THE PURPOSE OF INDICATING THE GROUND ELEVATION ONLY AT THE POSITION SHOWN AND IN NO WAY INDICATE ELEVATIONS AT ANY OTHER POINT THAN SHOWN HEREON AND DO NOT DETERMINE SUB SURFACE CONDITIONS.
5. THIS SURVEY LIES WITHIN SECTION 3, TOWNSHIP 45 SOUTH, RANGE 43 EAST, LANTANA, FLORIDA.
6. SHOWN ON THE U.S. DEPARTMENT OF HOMELAND SECURITY FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP, MAP NUMBER: 12099C0783F, COMMUNITY: TOWN OF LANTANA, NUMBER: 120214, PANEL 0783, SUFFIX: F, EFFECTIVE DATE: OCTOBER 5, 2017.
7. MEASUREMENTS SHOWN HEREON ARE EXPRESSED IN FEET AND DECIMAL PARTS THEREOF UNLESS OTHERWISE NOTED.
8. ELEVATIONS REFERENCED HEREON ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

STATEMENT OF PURPOSE

THE PURPOSE OF THIS SURVEY IS TO DEPICT THE EXISTING TOPOGRAPHY FOR HIGH SERVICE PUMP IMPROVEMENTS AND PROPOSED ELECTRICAL BUILDING AT TOWN OF LANTANA WATER TREATMENT PLANT.
SECTION 3, TOWNSHIP 45S, RANGE 43E,
TOWN OF LANTANA PALM BEACH COUNTY, FLORIDA.

BID SET

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NO.	DATE	ISSUED FOR	APRV'D BY

DESIGNED: S.J.P
DRAWN: H.L.N.
CHECKED: S.J.P
APPROVED: J.A.P.

SIRA J. PRINYAVIVATKUL
No. 64655

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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: G-2

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

GENERAL NOTES AND SURVEY INFORMATION, LEGEND AND NOTES

DATE: APRIL 2020
SHEET: 2 of 41
DRAWING: G-2

Date\Time : Thu, 23 Apr 2020 - 6:56pm
Path\Name : C:\Users\79NLN\Documents\HN\Projects\UNIT 181052-High Service Pump Imp\181052C_002.dwg
Current Plotstyle : ByColor Layout Tab: G-2
Acad Version : R22.0s (LMS Tech)
User Name : 79JHin

NORTH

10 5 0 10'

1"=10'-0"

18" DRAIN
℄ EL. 10.5

BROWARD STREET

GST 9-2
EXISTING 1.0 M.G.
CONCRETE STORAGE
TANK TOP EL. = 42.15'

GST 9-1
EXISTING 1.0 M.G.
STEEL STORAGE TANK
TOP EL. = 42.19'

18" POTABLE WATER
(GST 9-2 CONCRETE
STORAGE TANK CONNECTION)
℄ EL 15.3

18" POTABLE WATER
(GST 9-1 STEEL STORAGE TANK
CONNECTION)
℄ EL 16.6

N/D STAMPED "AVIROM & ASSOC.
TRAVERSE PT." B.M. EL. = 17.53'

14" POTABLE WATER TO
DISTRIBUTION SYSTEM ℄ EL. 14.0±

LOUVERED
OPENING

8" AIR
℄ EL 14.67

FLOW
METER

CONC.

CONCRETE

HIGH SERVICE
PUMP BUILDING

14" TRANSFER
℄ EL 14.5

14" TRANSFER
℄ EL 14.5

DRY
WELL

CONCRETE

EXISTING POLE, HANDHOLE
AND BOLLARDS

CONC.

12" TRANSFER
℄ EL 14.1

10" DIP (DOWN)

14"
TO
DISCHARGE
SYSTEM

METER
VAULT

14" DIP

6" CONTAINMENT PIPE

ASPHALT PAVEMENT

PARKING

CABLE TELEPHONE
BURRIED

4" SANITARY SEWER

BYPASS
℄ EL
14.3

VAULT

6" VENT

8"

COVERED CONC.

1 STORY BUILDING

CONC. WITH
STORAGE
CONTAINER

PAD
A/C

CONC.

1 STORY BUILDING
F.F. EL=17.19'

10" TRANSFER

4"DRAIN
℄ EL. 16.0

ANTENA
TELEMETRY

DECK WOOD

CONCRETE

CONCRETE

6' W
FENC

BID SET

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ENGINEER NO.: 181052.40

CLIENT
PROJECT NO.: BW2018-05

CAD REF.: G-3

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

EXISTING SURVEY

DATE: APRIL 2020

SHEET: 3 of 41

DRAWING: G-3

Date\Time : Thu, 23 Apr 2020 - 6:56pm Current Plotstyle : ByColor Layout Tab: G-3
Path\Name : C:\Users\793HLN\Documents\HNA Projects\LANT - 181052-High Service Pump Imp.\181052M_X_D_P-1.dwg
Acad Version : R22.0s (LMS Tech)
User Name : 793hln

NORTH

10 5 0 10'

1"=10'-0"

18" DRAIN
℄ EL. 10.5

BROWARD STREET

GST 9-2
EXISTING 1.0 M.G.
CONCRETE STORAGE
TANK TOP EL. = 42.15'

GST 9-1
EXISTING 1.0 M.G.
STEEL STORAGE TANK
TOP EL. = 42.19'

18" POTABLE WATER
(GST 9-2 CONCRETE
STORAGE TANK CONNECTION)
℄ EL 15.3

18" POTABLE WATER
(GST 9-1 STEEL STORAGE TANK
CONNECTION)
℄ EL 16.6

LOUVERED
OPENING
8" AIR
℄ EL 14.6'

FLOW
METER

CONC.

CONCRETE

14" TRANSFER
℄ EL 14.5

14" TRANSFER
℄ EL 14.5

DRY
WELL

EXISTING POLE, HANDHOLE
AND BOLLARDS

HIGH SERVICE PUMP BUILDING
(SEE DWG M-1)

14"
TO
DISCHARGE
SYSTEM

CONCRETE

CONC.

12" TRANSFER
℄ EL 14.1

10" DIP (DOWN)

14" DIP

6" CONTAINMENT PIPE

ASPHALT PAVEMENT

PARKING

CABLE TELEPHONE BURRIED

4" SANITARY SEWER

METER
VAULT

14" POTABLE WATER TO
DISTRIBUTION SYSTEM ℄ EL. 14.0±

N/D STAMPED "AVIROM & ASSOC.
TRAVERSE PT." B.M. EL. = 17.53'

BYPASS
℄ EL. 14.3

VAULT

6" VENT

8"

COVERED CONC.

17.42
(F.F.)

17.55'
(F.F.)

1 STORY BUILDING

CONC. WITH
STORAGE
CONTAINER

10" TRANSFER

4"DRAIN
℄ EL. 16.0

ANTENA
TELEMETRY

DECK WOOD

CONCRETE

17.35'
(F.F.)

CONCRETE

PAD
A/C

CONC.

1 STORY BUILDING
F.F. EL=17.19'

6' W
FENC

BID SET

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ENGINEER NO.: 181052.40

CLIENT
PROJECT NO.: BW2018-05

CAD REF.: C-1

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

EXISTING SITE PLAN

DATE: APRIL 2020

SHEET: 4 of 41

DRAWING: C-1

Date\Time : Thu, 23 Apr, 2020 - 6:56pm Current Plotstyle : ByColor Layout Tab: C-1
Path\Name : C:\Users\793HLN\Documents\HNA Projects\LANT - 181052-High Service Pump Imp.\181052M_X_D_P-1.dwg
Acad Version : R22.0s (LMS Tech)
User Name : 793hln

NORTH

10 5 0 10'

1"=10'-0"

18" DRAIN
℄ EL. 10.5

BROWARD STREET

GST 9-2
EXISTING 1.0 M.G.
CONCRETE STORAGE
TANK TOP EL. = 42.15'

GST 9-1
EXISTING 1.0 M.G.
STEEL STORAGE TANK
TOP EL. = 42.19'

18" POTABLE WATER
(GST 9-2 CONCRETE
STORAGE TANK CONNECTION)
℄ EL 15.3

18" POTABLE WATER
(GST 9-1 STEEL STORAGE TANK
CONNECTION)
℄ EL 16.6

14" POTABLE WATER TO
DISTRIBUTION SYSTEM ℄ EL. 14.0±

N/D STAMPED "AVIROM & ASSOC.
TRAVERSE PT." B.M. EL. = 17.53'

LOUVERED OPENING
8" AIR
℄ EL 14.6'

FLOW METER

CONC.

CONCRETE

PROPOSED BUILDING OUTLINE

49'-0"

9'-0"

8'-6"

5'-0" (MIN)

EXISTING PAVEMENT DEMOLITION (CU-2)

GROUND GRID INSTALL DEMOLITION (SEE DWG E-12)

4" TRANSFER
℄ EL 14.5

4" TRANSFER
℄ EL 14.5

20'-4" (MIN)

24" (TYP)

GROUND GRID INSTALL DEMOLITION (SEE DWG E-12)

15'-6"

8'-6"

5'-0" (MIN)

EXISTING PAVEMENT DEMOLITION

EXISTING POLE, HANDHOLE AND BOLLARDS

CONCRETE

CONC.

12" TRANSFER
℄ EL 14.1

10" DIP (DOWN)

14" TO 9'-0" DISCHARGE SYSTEM

EXISTING PAVEMENT DEMOLITION (CU-1)

METER VAULT

DRY WELL

BYPASS
℄ EL 14.3

14" DIP

ALTERNATIVE 2 DEMO
(SEE DWG M-4)

6" CONTAINMENT PIPE

ASPHALT PAVEMENT

VAULT

6" VENT

HIGH SERVICE PUMP BUILDING
(SEE DWG M-2)

PARKING

CABLE TELEPHONE BURRIED

4" SANITARY SEWER

8"

COVERED CONC.

17.42 (F.F.)

17.55' (F.F.)

1 STORY BUILDING

CONC. WITH STORAGE CONTAINER

PAD A/C

CONC.

1 STORY BUILDING F.F. EL=17.19'

10" TRANSFER

4"DRAIN
℄ EL. 16.0

ANTENA TELEMETRY

DECK WOOD

CONCRETE

CONCRETE

17.35' (F.F.)

LEGEND:

PAVEMENT DEMOLITION

PIPE DEMOLITION AND REMOVAL

ELECTRICAL COMPONENTS TO BE REMOVED
(SEE ELCTRICAL DRAWINGS)

NOTES:
1. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. WHERE SECTIONS OF THE EXISTING PAVEMENT TO BE REMOVED TO FACILITATE COMPLETION OF THE WORK, ALL REPLACEMENT PAVEMENT SHALL MATCH THE FINISHED ELEVATIONS OF THE EXISTING AND REPLACED IN KIND.
3. FOR PAVEMENT DEMOLITION FOR PROPOSED ELECTRICAL BUILDING AND WALKWAY FOUNDATION, SEE STRUCTURAL PLANS PREPARED BY WGI.

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VERIFY SCALE
1"
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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: C-2

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

DEMOLITION SITE PLAN

DATE: APRIL 2020
SHEET: 5 of 41
DRAWING: C-2

Date\Time : Thu, 23 Apr, 2020 - 6:56pm Current Plotstyle : ByColor Layout Tab: C-2
Path\Name : C:\Users\793HLN\Documents\HNA Projects\LANT - 181052-High Service Pump Imp\181052M_X_D_P-1.dwg
Acad Version : R22.0s (LMS Tech)
User Name : 793hln

NORTH

10 5 0 10'

1"=10'-0"

18" DRAIN
℄ EL. 10.5

BROWARD STREET

GST 9-2
EXISTING 1.0 M.G.
CONCRETE STORAGE
TANK TOP EL. = 42.15'

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℄ EL 15.3

18" POTABLE WATER
(GST 9-1 STEEL STORAGE TANK
CONNECTION)
℄ EL 16.6

14" POTABLE WATER TO
DISTRIBUTION SYSTEM ℄ EL. 14.0±

N/D STAMPED "AVIROM & ASSOC.
TRAVERSE PT." B.M. EL. = 17.53'

LOUVERED
OPENING
8" AIR
℄ EL 14.6'

FLOW
METER

CONC.

MATCH EXISTING
GRADE

1:12
SLOPE

CONCRETE

DRYWELL

5'-0"±
TYP

4'-0"
TYP

3'-0"

CONDENSER UNIT (CU-2)

25'-0"

14'-8"

30'-0"

34'-2"

4" TRANSFER
EL 14.5

4" TRANSFER
EL 14.5

PROPOSED
ELECTRICAL BLDG
F.F. EL 18.00'

MATCH EXISTING GRADE

10'-0"

17'-0"

12'-0"

1:12
SLOPE

1:12 SLOPE

8'-0"±

9'-0"±

8'-0"±

8'-0"±

FOR ELECTRICAL BUILDING
SITE PLAN
(SEE STRUCTURAL DRAWINGS)

DRY
WELL

DRYWELL

CONDENSER UNIT (CU-1)

BOLLARD
(TYP OF 8)

CONCRETE

EXISTING POLE, HANDHOLE
AND BOLLARDS

CONC.

12" TRANSFER
℄ EL 14.1

14"
TO
DISCHARGE
SYSTEM

METER
VAULT

14" DIP

HIGH SERVICE PUMP BUILDING
(SEE DWG M-3)

6" CONTAINMENT PIPE

ASPHALT PAVEMENT

PARKING

CABLE TELEPHONE
BURRIED

4" SANITARY SEWER

BYPASS
℄ EL 14.3

VAULT

6" VENT

8"

COVERED CONC.

17.42'
(F.F.)

17.55'
(F.F.)

1 STORY BUILDING

CONC. WITH
STORAGE
CONTAINER

PAD
A/C

CONC.

1 STORY BUILDING
F.F. EL=17.19'

10" TRANSFER

4"DRAIN
℄ EL. 16.0

17.35'
(F.F.)

CONCRETE

ANTENA
TELEMETRY

DECK WOOD

CONCRETE

LEGEND:

PAVEMENT DEMOLITION AND RESTORATION

BLDG	BUILDING
F.F.	FINISH FLOOR
EL	ELEVATION

NOTES:
1. CONTRACTOR TO VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. WHERE SECTIONS OF THE EXISTING PAVEMENT TO BE REMOVED TO FACILITATE COMPLETION OF THE WORK, ALL REPLACEMENT PAVEMENT SHALL MATCH THE FINISHED ELEVATIONS OF THE EXISTING AND REPLACED IN KIND.
3. PROPOSED ELECTRICAL AND STRUCTURAL SHOWN ON RESPECTIVE DISCIPLINE SHEETS. PROPOSED DIMENSIONS TO BE FIELD VERIFIED PRIOR TO CONSTRUCTION DUE TO POSSIBLE FIELD CONFLICTS, FIELD ADJUST AS NEEDED AND APPROVED BY DISCIPLINE ENGINEER.

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NO.	DATE	ISSUED FOR	APRV'D BY

DESIGNED: S.J.P
DRAWN: H.L.N.
CHECKED: S.J.P
APPROVED: J.A.P.

SIRA J. PRINYAVIVATKUL
No. 64655

BAXTER & WOODMAN Consulting Engineers
477 S. Rosemary Avenue, Suite 330, West Palm Beach, Florida 33401
Phone: 561-655-6175 ● Fax: 561-655-6179
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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: C-3

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

PROPOSED SITE PLAN

DATE: APRIL 2020
SHEET: 6 of 41
DRAWING: C-3

Date\Time : Thu, 23 Apr, 2020 - 6:56pm Current Plotstyle : ByColor Layout Tab: C-3
Path\Name : C:\Users\793HLN\Documents\HNA Projects\LANT - 181052-High Service Pump Imp\181052M_X_D_P-1.dwg
Acad Version : R22.0s (LMS Tech)
User Name : 793hln

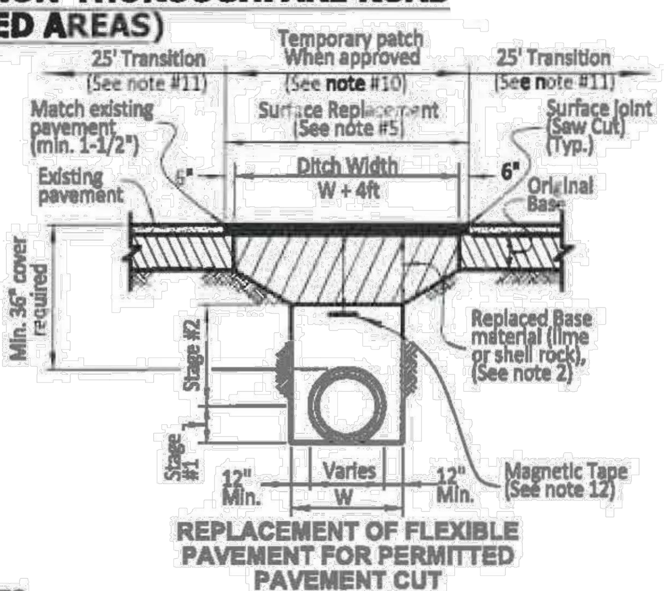
OPEN CUT DETAIL FOR NON-THOROUGHFARE ROAD (PAVED AREAS)

CONSTRUCTION PROCEDURES

THE BACKFILL FOR THE FIRST AND SECOND STAGES SHALL BE PLACED IN 6" LAYERS (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.

STAGE 1:
THE CONTRACTOR SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING REQUIRED.

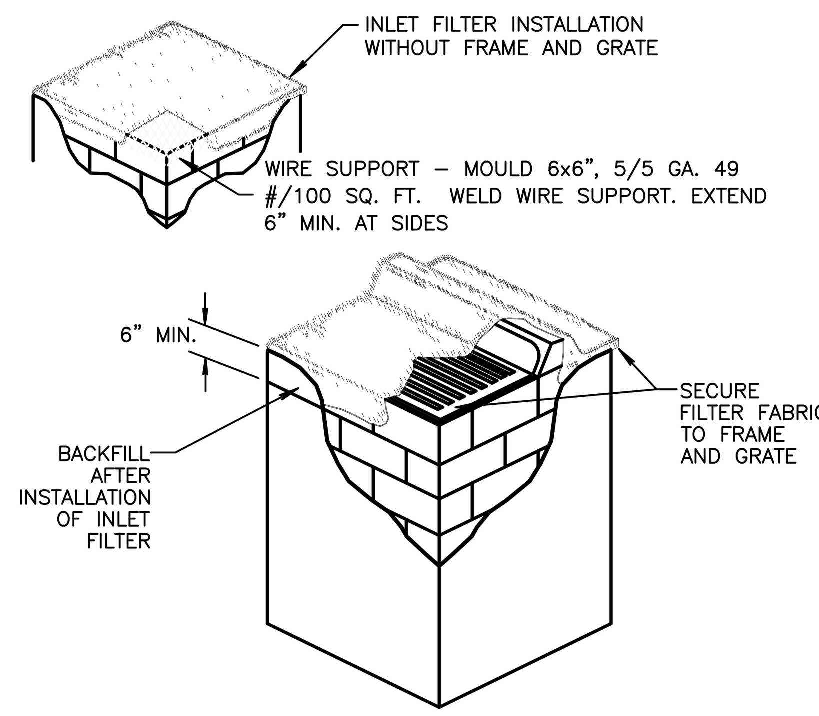
STAGE 2:
THE CONTRACTOR SHALL OBTAIN A WELL-COMPACTED BED AND FILL ALONG THE SIDES OF THE PIPE AND TO A POINT INDICATING THE TOP OF SUB-GRADE MATERIAL.



REPLACEMENT OF FLEXIBLE PAVEMENT FOR PERMITTED PAVEMENT CUT

NOTES

1) BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8" - 7/8" SIZING WITH EQUAL OR GREATER STRUCTURAL ADEQUACY AS EXISTING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2) REPLACED BASE MATERIAL (PER LAND DEVELOPMENT DESIGN STANDARDS) OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE AND MATCH THE TYPE OF MATERIAL OF THE ORIGINAL BASE OR 12" MINIMUM, WHICHEVER IS GREATER.
3) ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED AND BUTT-JOINTED.
4) BASE MATERIAL SHALL BE PLACED IN TWO OR THREE LAYERS (6" MAX. PER LAYER) AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO THE SPECIFIED DENSITY (MINIMUM 98% AASHTO - T-180)
5) SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE OR 1-1/2" SP 12.5 STRUCTURAL COURSE (TRAFFIC LEVEL A) ASPHALTIC CONCRETE WITH RC-70 PRIME COAT AT 0.10 GAL/SQ. YD. FOR LIMEROCK BASE AND TACK COAT AT 0.05 GAL/S.Y. FOLLOW THE LATEST FDOT SPECIFICATIONS FOR APPLICATION RATES OF PRIME AND TACK COATS, CONTRACTOR TO SUBMIT MATERIALS AND RATES TO ENGINEER FOR APPROVAL PRIOR TO BEGINNING WORK.
6) PIPE SHALL BE PLACED IN A DRY TRENCH.
7) ALL ROADWAY REPAIR WORK SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND COUNTY PPM# EL-0-3606.
8) DENSITY TESTS SHALL BE TAKEN IN 1 FT LIFTS ABOVE THE PIPE AT INTERVALS OF 400 FT MAXIMUM (1 SET MINIMUM) OR AS DIRECTED BY THE CONSTRUCTION COORDINATION DIVISION. RESULTS SHALL BE SUBMITTED TO CONSTRUCTION COORDINATION DIVISION AS PART OF THEIR FIELD REVIEW.
9) ENGINEER-OF-RECORD SHALL PROVIDE FULL-TIME INSPECTION DURING THE ENTIRETY OF THE OPEN-CUT OPERATION, BEGINNING WITH THE EXCAVATION AND CONTINUING THROUGH THE COMPLETION OF THE PAVING.
10) IF THE PAVEMENT IS NOT COMPLETELY RESTORED IMMEDIATELY FOLLOWING THE OPEN CUT, A SMOOTH TEMPORARY PATCH (MINIMUM 1.5" SP 12.5 STRUCTURAL COURSE ASPHALT) SHALL BE INSTALLED PROPERLY MATCHING THE EXISTING GRADING OF THE ROADWAY. THE TEMPORARY PATCH SHALL BE ALLOWED TO REMAIN IN PLACE AND BE MAINTAINED FOR A PERIOD NO LONGER THAN 45 DAYS. THE COUNTY RETAINS THE RIGHT TO USE POSTED SURETY TO COMPLETE ANY RESTORATION WORK THAT HAS NOT BEEN COMPLETED IN THE 45 DAY PERIOD.
ALTERNATIVE TEMPORARY TRENCH PROTECTION (STEEL PLATES OR OTHERS) MAY BE APPROVED BY THE CONSTRUCTION COORDINATION DIVISION.
11) FOR THE FINAL RESTORATION (INCLUDES THE PATCHED/SURFACE REPLACEMENT AREA OVER THE TRENCH), THE ROAD SHALL BE MILLED AND RESURFACED WITH 1-1/2" (ONE AND A HALF INCH) OF SP 12.5 STRUCTURAL COURSE (TRAFFIC LEVEL A) WITH TACK COAT AT 0.05 GAL/SY AND RC-70 PRIME COAT AT 0.10 GAL./SY. FOR A FULL LANE WIDTH ENCROACHED BY THE TRENCH INCLUDING A TRANSITION AREA OF 25 FT. EACH SIDE MEASURED FROM TOP OF TRENCH.
12) APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL MAIN PRESSURE PIPES AND CONDUIT IN THE COUNTY'S RIGHT-OF-WAY. INSTALL TAPE 24" BELOW FINISHED GRADE.
13) CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SANITARY FORCE MAINS (GREEN),DIP RECLAIMED WATER MAINS (PURPLE), GAS MAINS (YELLOW), OR AS REQUIRED BY THE APWA



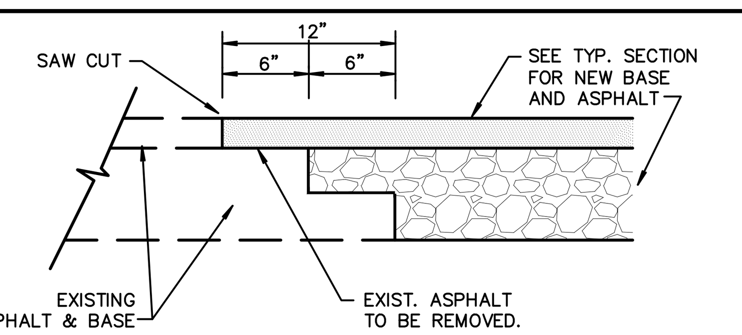
NOTES:

1. CONTRACTOR IS TO CLEAN INLET FILTER AFTER EVERY STORM.
2. CONTRACTOR TO REMOVE FABRIC JUST PRIOR TO PAVING.

A SEDIMENT TRAP WILL BE EXCAVATED BEHIND THE CURB AT THE INLET. THE BASIN SHALL BE AT LEAST 12 TO 14 INCHES IN DEPTH, APPROXIMATELY 36 INCHES IN WIDTH, AND APPROXIMATELY 7 TO 10 FEET IN LENGTH PARALLEL TO THE CURB.

STORM WATER WILL REACH THE SEDIMENT TRAP VIA CURB CUTS ADJACENT TO EACH SIDE OF THE INLET STRUCTURE. THESE OPENINGS SHALL BE AT LEAST 12 INCHES IN LENGTH. STORM WATER MAY ALSO REACH THE BASIN VIA OVERLAND FLOW LAND AREA BEHIND THE CURB. THE CURB CUTS SHALL BE REPAIRED WHEN THE SEDIMENT TRAP IS REMOVED.

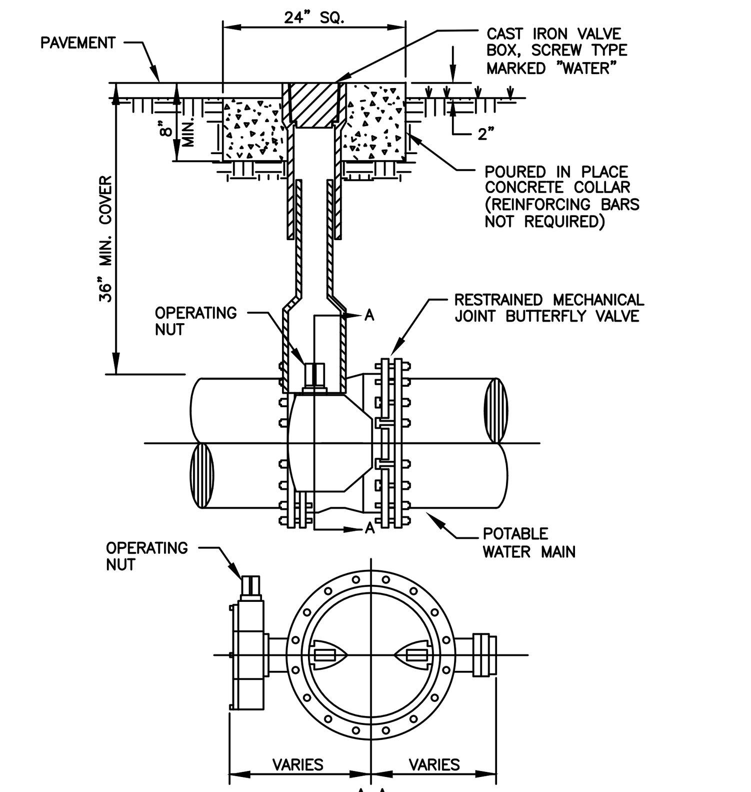
INLET FILTER DETAIL
N.T.S.



NOTE:

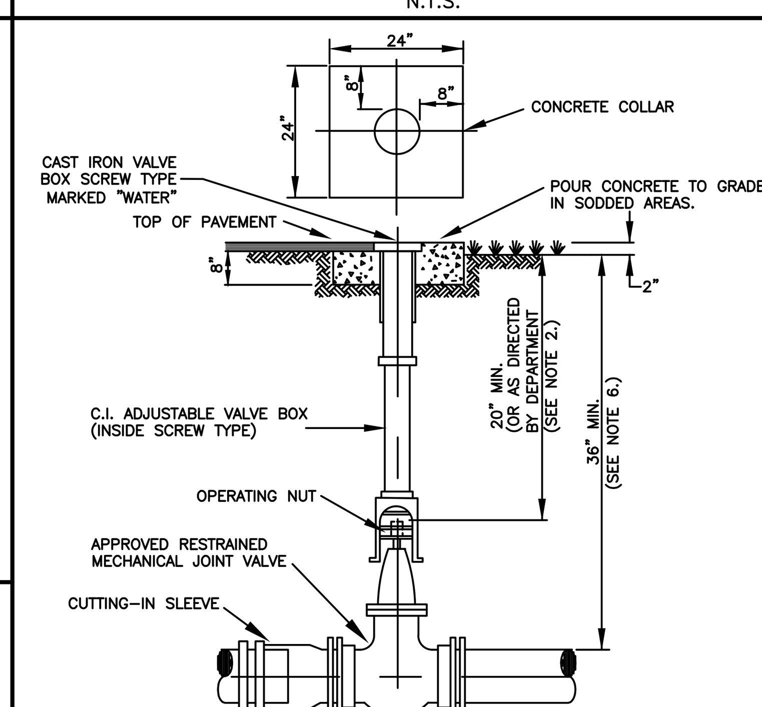
THIS METHOD OF PAVEMENT JOINT SHALL BE USED FOR ANY APPLICATION OR CONSTRUCTION WHERE PROPOSED PAVEMENT AND BASE WILL BE CONNECTED TO EXISTING PAVEMENT AND BASE.

PAVEMENT JOINT DETAIL
N.T.S.



NOTES:
1. CONCRETE COLLAR IS NOT REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION.
2. WHEN TOP OF OPERATING NUT IS DEEPER THAN 42" AN EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 24"–30" BELOW FINISHED GRADE. EXTENSION BOLTS & NUTS ARE TO BE STAINLESS STEEL. A HIGH STRENGTH STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.
3. VALVE BOXES SHALL HAVE COVERS MARKED "WATER".
4. A CUT–IN INSTALLATION SHALL REQUIRE MEGALUGS OR EQUAL THROUGHOUT ASSEMBLY.
5. EXTENSION VALVE BOX TO BE D.I.P. OR C–900 PVC DR 18 (COLOR: BLUE)
6. VALVES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS WHENEVER POSSIBLE.

TYPICAL BUTTERFLY VALVE SETTING
N.T.S.

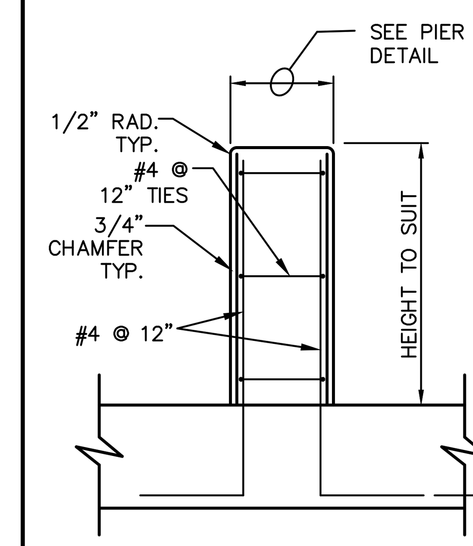


NOTES:
1. CONCRETE COLLAR IS NOT REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION.
2. WHEN OPERATING NUT IS DEEPER THAN 36" A ONE PIECE EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 20"–30" BELOW FINISHED GRADE. EXTENSION BOLTS & NUTS ARE TO BE STAINLESS STEEL. A HIGH STRENGTH STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.
3. VALVE BOXES SHALL HAVE COVERS MARKED "WATER".
4. VALVE BOX EXTENSION TO BE D.I.P. OR C–900 PVC SDR 18 (BLUE) A CUT–IN INSTALLATION
5. SHALL REQUIRE MEGALUGS OR EQUAL THROUGHOUT ASSEMBLY.
6. IN ORDER TO MAINTAIN ADEQUATE COVER OVER VALVE NUT, THE FOLLOWING MINIMUM COVERS OVER PIPE ARE REQUIRED.

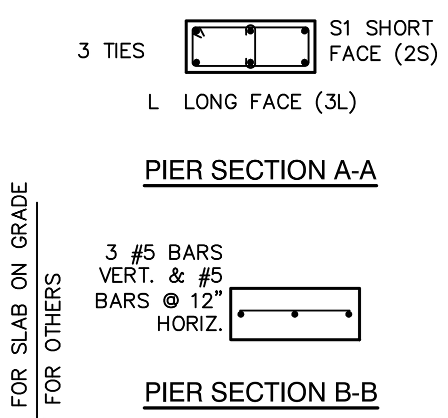
GATE VALVE SIZE	MIN. COVER OVER PIPE
16"	48"
20"	54"
24"	60"
30"	72"
36"	84"

7. VALVES IN ROADWAYS SHALL BE LOCATED OUTSIDE OF WHEEL PATHS WHENEVER POSSIBLE.

TYPICAL GATE VALVE SETTING AND MAIN CUT–IN DETAIL
N.T.S.



PIER OVER NEW SLAB



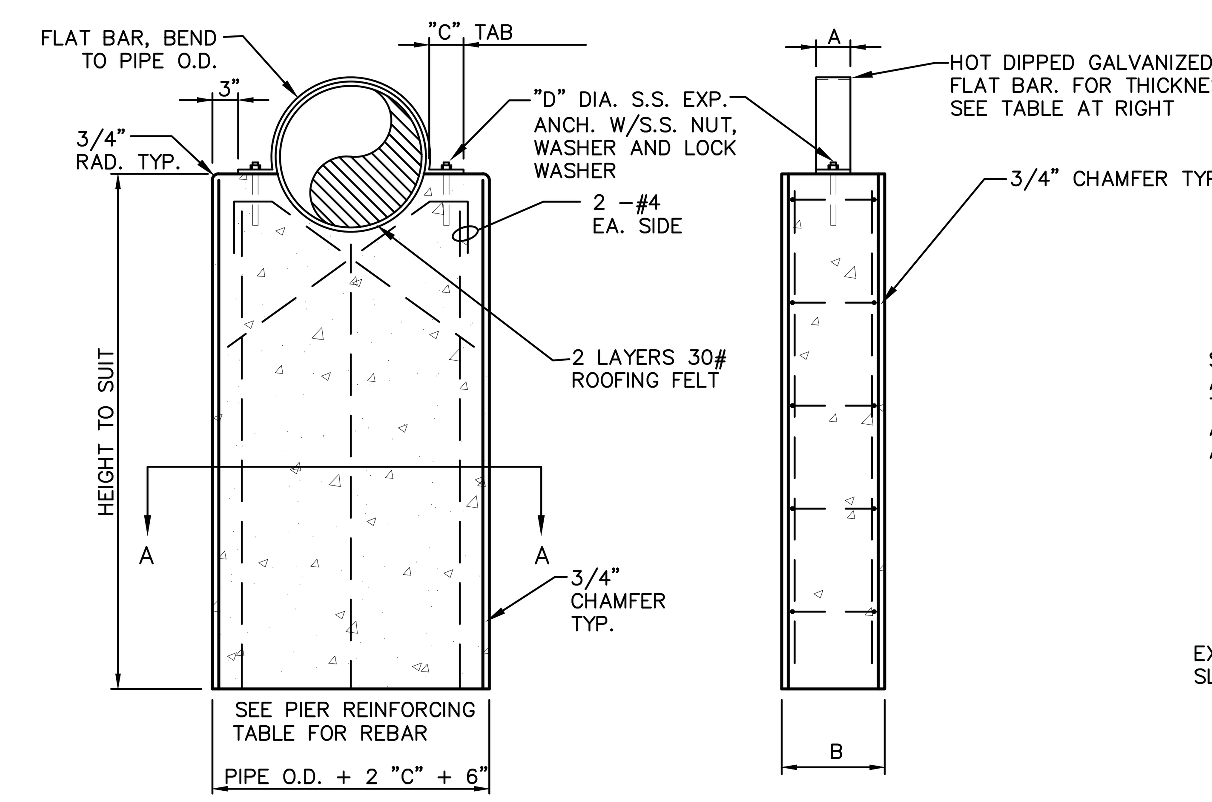
PIER SECTION A-A

PIER SECTION B-B

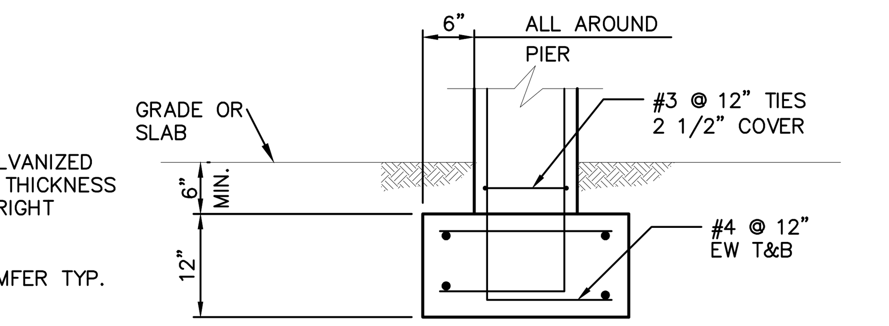
NOTE:
1. SEE PIER DETAILS FOR ADDITIONAL #4 REBAR AT TOP.

PIPE SUPPORT ASSEMBLY

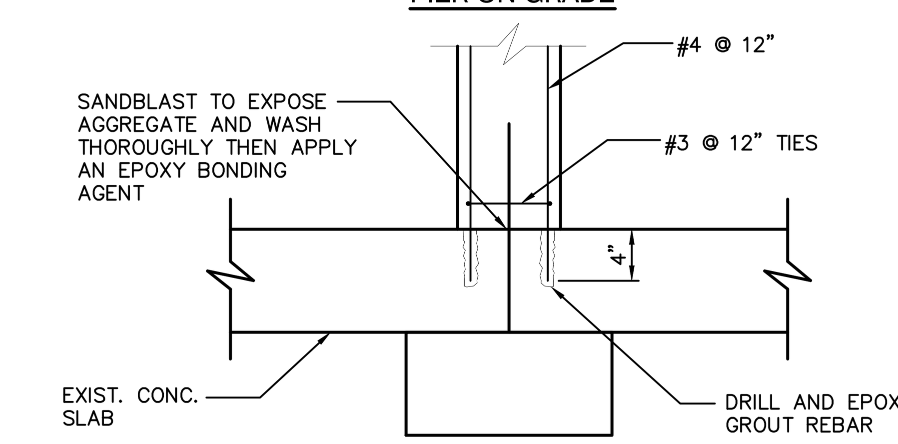
NOMINAL PIPE O.D.	"A"	"B"	"C"	"D"	FLAT BAR	FNDN SIZE W x L x 12"	FNDN LW	REBAR SW	PIER SIZE W x L	PIER REBAR EACH FACE	TIES
4	4	8	4	5/8	1/4	2'–0"x2'–8"x12"	2– #5	2– #5	1'–0" x 1'–6"	PIER SEC. BB	
6	4	12	4	5/8	1/4	2'–0"x2'–8"x12"	2– #5	2– #5	1'–0" x 1'–6"	4– #5 2L2S	1 – #3 @ 12"
8	4	12	4	5/8	1/4	2'–10"			1'–0" x 1'–10"	4– #5 L2S	1 – #3 @ 12"
10	4	12	4	5/8	1/4	3'–0"			2'–0"	6– #5 3L2S	2 – #3 @ 12"
12	4	12	4	5/8	1/4	3'–2"			2'–2"	6– #5 3L2S	2 – #3 @ 12"
14	4	12	4	5/8	1/4	3'–4"			2'–4"	6– #5 3L2S	2 – #3 @ 12"
16	4	12	4	5/8	1/4	3'–6"			2'–6"	6– #5 3L2S	2 – #3 @ 12"
18	4	12	4	5/8	1/4	3'–8"			2'–8"	8– #5 4L2S	3 – #3 @ 12"
20	5	12	5	5/8	3/8	4'–0"			3'–0"	8– #5 4L2S	3 – #3 @ 12"
22	5	12	5	5/8	3/8	4'–2"			3'–2"	8– #5 4L2S	3 – #3 @ 12"
24	5	12	5	5/8	3/8	4'–4"			3'–4"	8– #5 4L2S	3 – #3 @ 12"
26	5	12	5	3/4	3/8	4'–6"			3'–6"	10– #5 5L2S	4 – #3 @ 12"
30	5	12	5	5/8	3/8	2'–0"x5'–0"			1'–0" x 3'–10"	10– #5 5L2S	4 – #3 @ 12"
34	5	15	5	3/4	3/8	2'–3"x5'–2"	3– #5		1'–3" x 4'–2"	12– #5 5L3S	4 – #3 @ 12"
36	6	15	6	3/4	3/8	2'–3"x5'–6"			1'–3" x 4'–6"	12– #5 5L3S	4 – #3 @ 12"
42	6	18	6	/	3/8	2'–6"x6'–0"			1'–6" x 5'–0"	14– #6 5L3S	5 – #3 @ 12"
48	6	18	6	/	3/8	6'–6"			5'–6"	14– #6 6L3S	6 – #3 @ 12"
54	6	18	6	/	3/8	7'–0"			6'–0"	16– #6 7L3S	6 – #3 @ 12"
60	6	18	6	1 1/8	3/8	7'–6"			6'–6"	16– #6 7L3S	6 – #3 @ 12"
66	6	18	6	1 1/8	3/8	8'–0"			7'–0"	16– #7 7L3S	6 – #3 @ 12"
72	6	18	6	1 1/8	3/8	2'–6"x8'–6"x12"	3– #5	6– #5	1'–6" x 7'–6"	16– #7 7L3S	6 – #3 @ 12"



PIER DETAILS



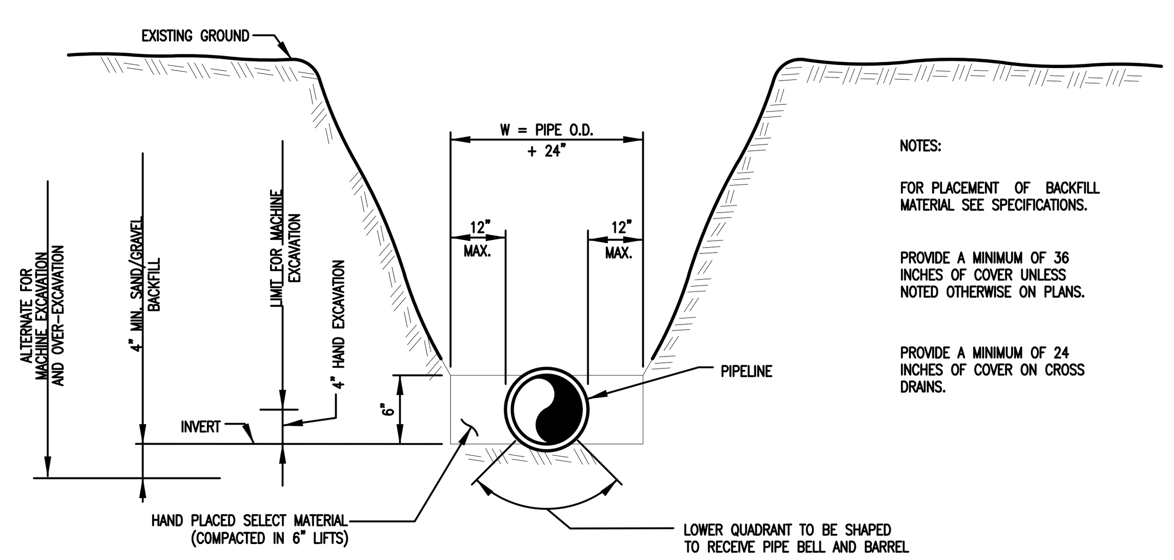
PIER ON GRADE



PIER OVER EXISTING SLAB AND OR FOOTING

PIER FOUNDATION DETAILS

CONCRETE PIER PIPE SUPPORT



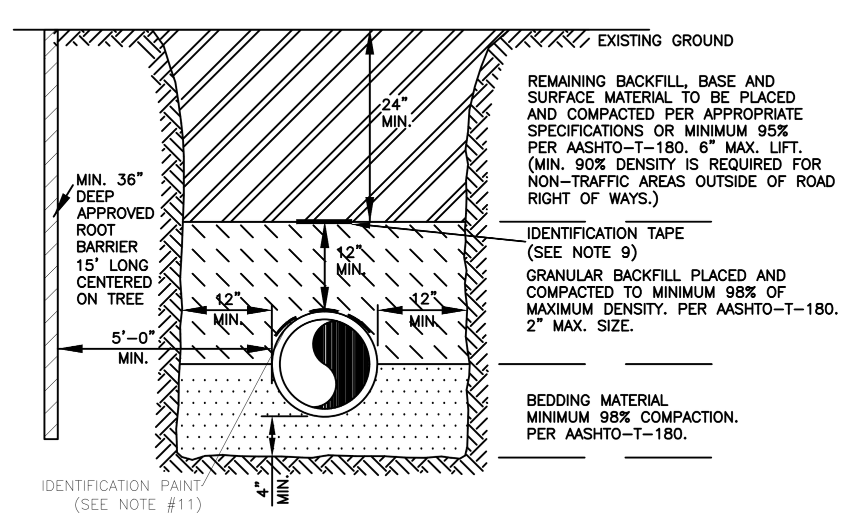
NOTES:

FOR PLACEMENT OF BACKFILL MATERIAL SEE SPECIFICATIONS.

PROVIDE A MINIMUM OF 36 INCHES OF COVER UNLESS NOTED OTHERWISE ON PLANS.

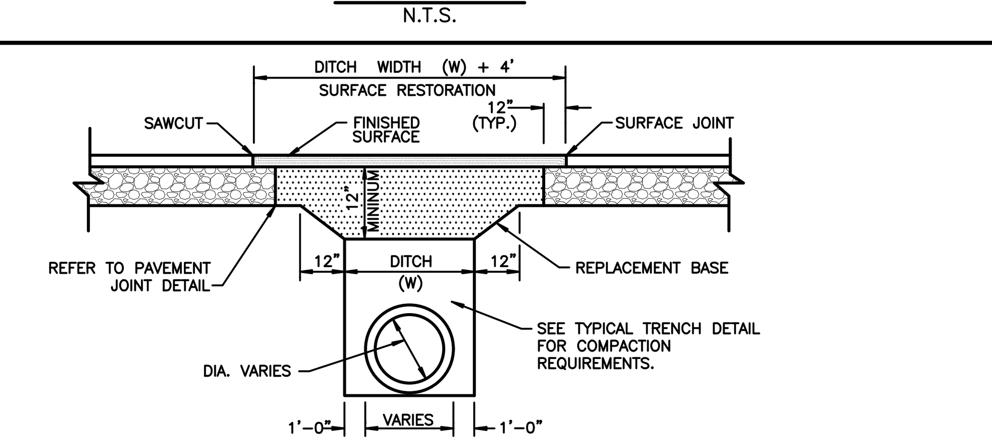
PROVIDE A MINIMUM OF 24 INCHES OF COVER ON CROSS DRAINS.

TRENCHING
N.T.S.



NOTES:

1. BEDDING SHALL CONSIST OF IN–SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"– 7/8" SIZING. UNSUITABLE IN–SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.
4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK AND DEBRIS.
5. DENSITY TESTS ARE REQUIRED IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM, MINIMUM 1 SET OF TESTS FOR EACH WASTEWATER GRAVITY MAIN RUN, OR AS DIRECTED BY THE INSPECTOR.
6. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.
7. SEE SEPARATE DETAILS FOR "PIPE INSTALLATION UNDER EXISTING PAVEMENT – OPEN CUT."
8. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.
9. APPROVED MAGNETIC TAPE IS REQUIRED FOR: ALL POTABLE WATER MAINS, FORCE MAINS AND RECLAIMED WATER MAINS. THE TAPE SHALL BE INSTALLED MAX. 24" BELOW FINISHED GRADE.
10. ROOT BARRIER IS REQUIRED FOR APPROVED TREE INSTALLATION CLOSER THAN 10 FEET FROM UTILITY FACILITIES.
11. CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SEWER MAINS (GREEN), AND DIP RECLAIMED WATER MAINS (PURPLE).
12. PERMANENT ABOVE GROUND UTILITY MARKER SHALL BE INSTALLED IF REQUIRED BY PROPERTY OWNER GRANTING THE PIPE INSTALLATION PERMIT.
13. FOR PIPE INSTALLATIONS IN ROAD RIGHTS–OF–WAY, ROAD OWNER'S PERMIT SPECIFICATIONS SHALL APPLY.



1. REPLACEMENT BASE TO BE AT MIN. 12" THICK.
2a. BASE MATERIAL SHALL BE PLACED IN TWO LIFTS AND EACH LIFT COMPACTED TO 98% MAXIMUM DENSITY PER AASHTO T–180. (MAX. LIFT THICKNESS = 6").
2b. 12" EXCAVATABLE FLOWABLE FILL MIN. 100 P.S.I. MAY BE USED IN LEU OF 12" BASE.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
4. ALL DISTURBED PAVEMENT MARKINGS SHALL BE RESTORED IN ACCORDANCE WITH CITY STANDARDS.
5. SURFACE MATERIAL SHALL BE F.D.O.T. S–III ASPHALTIC CONC. (MIN. THICKNESS 1 1/2").
6. ANY PAVT. CUTS SHALL BE COLD PATCHED AT END OF EACH WORKING DAY TO FACILITATE UNHINDERED TRAFFIC FLOW.

PAVEMENT REPAIR DETAIL
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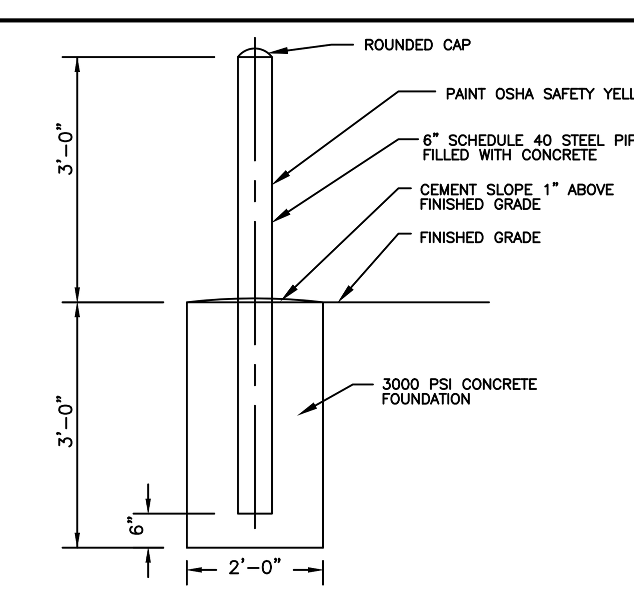
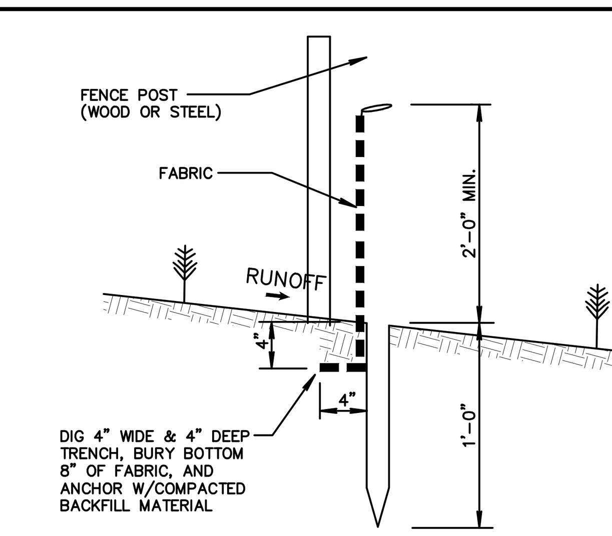
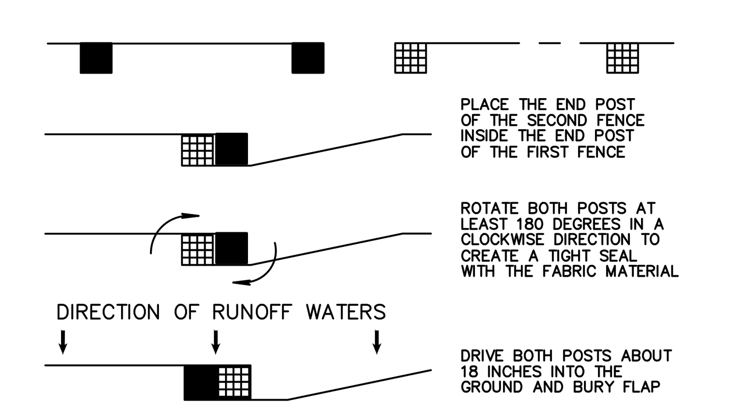


BOLLARD
N.T.S.

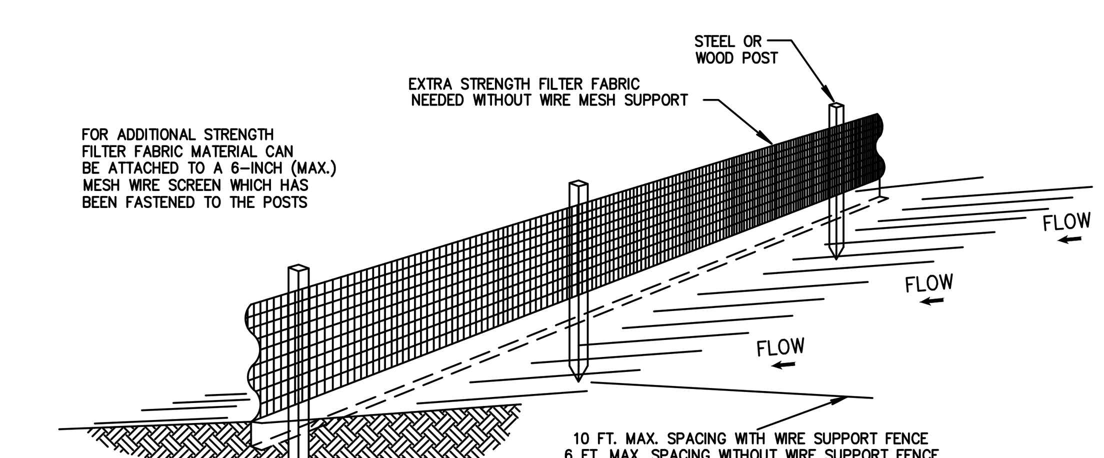


SILT FENCE SECTION



ATTACHING TWO SILT FENCES

SILT FENCE INSTALLATION DETAIL
N.T.S.



NOTES:

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

SILT FENCE INSTALLATION DETAIL
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DRAWN: H.L.N.
CHECKED: S.J.P
APPROVED: J.A.P.

SIRA J. PRINYAVIVATKUL
No. 64655

BAXTER & WOODMAN Consulting Engineers
477 S. Rosemary Avenue, Suite 330, West Palm Beach, Florida 33401
Phone: 561-655-6175 ● Fax: 561-655-6179
www.baxterwoodman.com EB-31795

VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT PROJECT NO.: BW2018–05
CAD REF.: D–1

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

STANDARD DETAILS

DATE: APRIL 2020

DRAWING: D–1

NORTH

1"=4'-0"

4 2 0 4'

18" POTABLE WATER (GST 9-2 CONCRETE STORAGE TANK CONNECTION) ℄ EL 15.3

18" POTABLE WATER (GST 9-1 STEEL STORAGE TANK CONNECTION) ℄ EL 16.6

FLOW METER

LOUVERED OPENING

8" AIR ℄ EL 14.67

EXISTING ATS (SEE ELECTRICAL DRAWINGS)

EXISTING MAIN BREAKER (SEE ELECTRICAL DRAWINGS)

EXISTING TRANSFORMER 'TRA' (SEE ELECTRICAL DRAWINGS)

14" TRANSFER ℄ EL 14.5

DISCONNECT (SEE ELECTRICAL DRAWINGS

CONCRETE

GEN. RECEPT. (SEE ELECTRICAL DRAWINGS

A/C

MCC-A1, GE 8000 LINE METER CONTROL

MCC-A, GE 8000 LINE METER CONTROL

PANEL 'A'

R I/O J-BOX

I/O PANEL

14" TRANSFER ℄ EL 14.5

VFD2 VFD4 VFD3

12"x10" REDUCER

GRATE

18"

6" HIGH STEEL PLATFORM (TYP)

BLOWER SAFETY SWITCH

CCW WELL-5

10" 90° BEND (TYP)

EXIST. TRANSFER PUMP

DRY WELL

T3 60A SWITCH

14" 90° BEND

14" GV

16"x14" REDUCER

PUMP #1

PUMP #2

PUMP #3

PUMP #4

12" DIP

10" DIP

6" HIGH STEEL PLATFORM (TYP)

5" HIGH CONCRETE

5 1/2" HIGH CONCRETE CURB

10" OIL CUSHION CHECK VALVE (TYP)

10" GATE VALVE (TYP)

14"x10" WYE (TYP OF 3)

EXISTING POLE, HANDHOLE AND BOLLARDS

SINGLE STAGE HORIZONTAL SPLIT CASE PUMP (TYP)

LOUVERED OPENING

CONCRETE

10" DIP

14" DIP

EXISTING PVC DRAIN

12" TRANSFER ℄ EL 14.1

10" 90° BEND

10" DIP (DOWN)

CONCRETE

EXISTING 14" DIP

14" TO DISCHARGE SYSTEM

EXISTING 14"x10" TAPPING SLEEVE AND 10" BLIND FLANGE

12" BYPASS ℄ EL 14.3

TP 5-1 TP 5-2 TP 5-3

BID SET

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NO.	DATE	ISSUED FOR	APRV'D BY

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ENGINEER NO.: 181052.40

CLIENT PROJECT NO.: BW2018-05

CAD REF.: M-1

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

EXISTING HIGH SERVICE PUMP BUILDING

DATE: APRIL 2020

SHEET: 8 of 41

DRAWING: M-1

Acad Version : R22.0s (LMS Tech)
User Name : jhjohn
Date\Time : Thu, 23 Apr 2020 - 6:57pm
Path\Name : C:\Users\jhjohn\Documents\VAN\Projects\LANTT 181052-High Service Pump Imp\181052M_X_D_P-1.dwg
Current Plotstyle : ByColor Layout Tab: M-1

NORTH

1"=4'-0"

4 2 0 4'

LEGEND:

PAVEMENT DEMOLITION

PIPE DEMOLITION AND REMOVAL

ELECTRICAL COMPONENT REMOVAL (SEE ELECTRICAL DRAWINGS)

NOTES:

1. DEMOLISH ALL EXISTING PIPE PEDESTALS AND EQUIPMENT PADS BENEATH COMPONENTS BEING REMOVED.
2. PROVIDE BYPASS PUMPING FOR DURATION OF PROJECT TO ENSURE CONSTANT PRESSURE ON THE SYSTEM. REFER TO TECHNICAL SPECIFICATIONS FOR REQUIREMENTS.
3. WHERE SECTIONS OF THE EXISTING PAVEMENT TO BE REMOVED TO FACILITATE COMPLETION OF THE WORK, ALL REPLACEMENT PAVEMENT SHALL MATCH THE FINISHED ELEVATIONS OF THE EXISTING AND REPLACED IN KIND.
4. ELECTRICAL AND STRUCTURAL DEMOLITION SHOWN ON RESPECTIVE DISCIPLINE SHEETS.

18" POTABLE WATER (GST 9-2 CONCRETE STORAGE TANK CONNECTION) ℄ EL 15.3

18" POTABLE WATER (GST 9-1 STEEL STORAGE TANK CONNECTION) ℄ EL 16.6

EXISTING ATS (SEE ELECTRICAL DRAWINGS) (REMOVE)

EXISTING MAIN BREAKER (SEE ELECTRICAL DRAWINGS) (REMOVE)

EXISTING TRANSFORMER 'TRA' (SEE ELECTRICAL DRAWINGS) (REMAIN)

14" TRANSFER ℄ EL 14.5

DISCONNECT (SEE ELECTRICAL DRAWINGS (REMAIN)

CONCRETE

GEN. RECEPT. (SEE ELECTRICAL DRAWINGS (REMAIN)

FLOW METER

LOUVERED OPENING

8" AIR ℄ EL 14.67

A/C

MCC-A1, GE 8000 LINE METER CONTROL (REMAIN)

MCC-A2, GE 8000 LINE METER CONTROL (REMOVE)

PANEL 'A' (REMAIN)

R I/O J-BOX (REMAIN)

I/O PANEL (REMAIN)

12"x10" REDUCER (REMOVE)

GRATE

6" HIGH STEEL PLATFORM (TYP) (REMOVE)

14" TRANSFER ℄ EL 14.5

EXISTING PAVEMENT DEMOLITION

PROPOSED ELECTRICAL BUILDING OUTLINE

BLOWER SAFETY SWITCH

CCW WELL-5

18"

10" 90° BEND (TYP) (REMOVE)

DRY WELL

EXIST. TRANSFER PUMP

T3 60A SWITCH

14" 90° BEND (REMAIN)

16"x14" REDUCER (REMOVE)

14" GV (REMOVE)

6" HIGH STEEL PLATFORM (TYP) (REMOVE)

5" HIGH CONCRETE (REMOVE)

5 1/2" HIGH CONCRETE CURB

HSP PUMP #1

EXISTING POLE, HANDHOLE AND BOLLARDS

SINGLE STAGE HORIZONTAL SPLIT CASE PUMP (TYP) (REMOVE)

10" OIL CUSHION CHECK VALVE (TYP) (REMOVE)

10" GATE VALVE (TYP) (REMOVE)

14"x10" WYE (TYP OF 3) (REMAIN)

14" DIP

CONCRETE

LOUVERED OPENING

OPENING FOR PIPE PASSING THROUGH BUILDING TO BE SEALED (SEE STRUCTURAL DRAWINGS)

EXISTING PVC DRAIN (REMOVE)

CONCRETE

EXISTING 14" DIP

12" TRANSFER ℄ EL 14.1

10" 90° BEND (REMOVE AND CAP WITH BLIND FLANGE)

10" DIP (DOWN)

14" TO DISCHARGE SYSTEM

CONCRETE

EXISTING 14"x10" TAPPING SLEEVE AND 10" BLIND FLANGE (REMOVE 10" BLIND FLANGE)

12" BYPASS ℄ EL 14.3

TP 5-1 TP 5-2 TP 5-3

BID SET

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DESIGNED: S.J.P

DRAWN: H.L.N.

CHECKED: S.J.P

APPROVED: J.A.P.

SIRA J. PRINYAVIVATKUL
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VERIFY SCALE

1"

BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40

CLIENT PROJECT NO.: BW2018-05

CAD REF.: M-2

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

DEMOLITION HIGH SERVICE PUMP BUILDING

DATE: APRIL 2020

SHEET: 9 of 41

DRAWING: M-2

Date\Time : Thu, 23 Apr 2020 - 6:57pm
Path\Name : C:\Users\793HLN\Documents\VAN\Projects\LANTT 181052-High Service Pump Imp\181052M_X_D_P-1.dwg
Current Plotstyle : ByColor Layout Tab: M-2
Acad Version : R22.0s (LMS Tech)
User Name : 793hln

NORTH
4 2 0 4'
1"=4'-0"

LEGEND:
PAVEMENT DEMOLITION AND RESTORATION
BLDG BUILDING
TYP TYPICAL

NOTES:
1. PROVIDE BYPASS PUMPING FOR DURATION OF PROJECT TO ENSURE CONSTANT PRESSURE ON THE SYSTEM. REFER TO TECHNICAL SPECIFICATIONS FOR REQUIREMENTS.
2. WHERE SECTIONS OF THE EXISTING PAVEMENT TO BE REMOVED TO FACILITATE COMPLETION OF THE WORK, ALL REPLACEMENT PAVEMENT SHALL MATCH THE FINISHED ELEVATIONS OF THE EXISTING AND REPLACED IN KIND.
3. PROPOSED ELECTRICAL AND STRUCTURAL SHOWN ON RESPECTIVE DISCIPLINE SHEETS.
4. PUMPS TO BE RENUMBERED, AS SHOWN HEREON.

18" POTABLE WATER (GST 9-2 CONCRETE STORAGE TANK CONNECTION) ℄ EL 15.3
14" GATE VALVE (BELOW GRADE)
14" 90° BEND TO BE CONNECTED TO GATE VALVE (BELOW GRADE)
14" 90° BEND BYPASS CONNECTION (ABOVE GRADE)
18"x14" TAPPING SLEEVE
A M-5
18" POTABLE WATER (GST 9-1 STEEL STORAGE TANK CONNECTION) ℄ EL 16.6
14" TRANSFER ℄ EL 14.5
FLOW METER
LOUVERED OPENING
8" AIR ℄ EL 14.67
TERMINATION BOX (SEE ELECTRICAL DRAWINGS)
DISCONNECT (SEE ELECTRICAL DRAWINGS
EXISTING TRANSFORMER 'TRA' (SEE ELECTRICAL DRAWINGS)
CONCRETE
EXISTING GEN. RECEPT. (SEE ELECTRICAL DRAWINGS)
MCC-A1, GE 8000 LINE METER CONTROL
MCC-A (SEE ELECTRICAL DRAWINGS)
MOTOR TERMINAL BOX (TYP OF 3) (SEE ELECTRICAL DRAWINGS)
PANEL 'A'
R I/O J-BOX
I/O PANEL
18"
10" GATE VALVE (TYP OF 3)
GRATE
BLOWER SAFETY SWITCH
CCW WELL-5
18"
10" 90° BEND (TYP OF 3)
INSTALL 3/4" PVC DRAIN (TYP OF 3)
CONSTRUCT STEEL PLATFORM (TYP OF 3)
PROPOSED ELECTRICAL BUILDING F.F. EL = 18.00'
EXIST. TRANSFER PUMP
DRY WELL
T3 60A SWITCH
14" 90° BEND (REMAIN)
14" GATE VALVE
14" BLIND FLANGE
10" DIP
PUMP #3
PUMP #2
PUMP #1
HORIZONTAL SPLIT CASE PUMP (TYP OF 3)
CIRCUIT BREAKER (TYP OF 3) (SEE ELECTRICAL DRAWINGS
8"X10" REDUCER (TYP OF 3)
10" OIL CUSHION CHECK VALVE (TYP OF 3)
14"x10" WYE (TYP OF 3)
5 1/2" HIGH CONCRETE CURB
CONCRETE
LOUVERED OPENING
14" GATE VALVE
10" GATE VALVE (TYP OF 3)
14" BLIND FLANGE
14" DIP
CONDENSER UNIT (CU) SLAB (SEE STRUCTURAL DRAWINGS)
CU-1
BOLLARD (TYP)
DRYWELL
12" TRANSFER ℄ EL 14.1
10" BLIND FLANGE
CONCRETE
14" TO DISCHARGE SYSTEM
B M-5
12" BYPASS ℄ EL 14.3
INSTALL:
(1) 10" 90° BEND BYPASS CONNECTION (ABOVE GRADE)
(1) 10" BLIND FLANGE
(1) 10" GATE VALVE (VERTICAL ABOVE GRADE)
CONNECT TO EXISTING 14"x10" TAPPING SLEEVE
TP 5-1
TP 5-2
TP 5-3

BID SET

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NO.	DATE	ISSUED FOR	APRV'D BY

DESIGNED: S.J.P
DRAWN: H.L.N.
CHECKED: S.J.P
APPROVED: J.A.P.

SIRA J. PRINYAVIVATKUL
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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: M-3

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

PROPOSED HIGH SERVICE PUMP BUILDING

DATE: APRIL 2020
SHEET: 10 of 41
DRAWING: M-3

Date\Time : Thu, 23 Apr 2020 - 6:57pm
Path\Name : C:\Users\TSHEN\Documents\VAN\Projects\LANTT 181052-High Service Pump Imp\181052M_X_D_P-1.dwg
Current Plotstyle : ByColor Layout Tab: M-3
Acad Version : R22.0s (LMS Tech)
User Name : TShen

NORTH
4 2 0 4'
1"=4'-0"

LEGEND:
PAVEMENT DEMOLITION AND RESTORATION
BLDG BUILDING
TYP TYPICAL

NOTES:
1. PROVIDE BYPASS PUMPING FOR DURATION OF PROJECT TO ENSURE CONSTANT PRESSURE ON THE SYSTEM. REFER TO TECHNICAL SPECIFICATIONS FOR REQUIREMENTS.
2. WHERE SECTIONS OF THE EXISTING PAVEMENT TO BE REMOVED TO FACILITATE COMPLETION OF THE WORK, ALL REPLACEMENT PAVEMENT SHALL MATCH THE FINISHED ELEVATIONS OF THE EXISTING AND REPLACED IN KIND.
3. PROPOSED ELECTRICAL AND STRUCTURAL SHOWN ON RESPECTIVE DISCIPLINE SHEETS.
4. PUMPS TO BE RENUMBERED, AS SHOWN HEREON.

18" POTABLE WATER (GST 9-2 CONCRETE STORAGE TANK CONNECTION) ℄ EL 15.3
18" POTABLE WATER (GST 9-1 STEEL STORAGE TANK CONNECTION) ℄ EL 16.6
14" TRANSFER ℄ EL 14.5
FLOW METER
LOUVERED OPENING
8" AIR ℄ EL 14.67
TERMINATION BOX (SEE ELECTRICAL DRAWINGS)
DISCONNECT (SEE ELECTRICAL DRAWINGS
CONCRETE EXISTING GEN. RECEPT. (SEE ELECTRICAL DRAWINGS)
EXISTING TRANSFORMER 'TRA' (SEE ELECTRICAL DRAWINGS)
MCC-A1, GE 8000 LINE METER CONTROL
MCC-A (SEE ELECTRICAL DRAWINGS)
PANEL 'A'
R I/O J-BOX
I/O PANEL
18"
GRATE
BLOWER SAFETY SWITCH
CCW WELL-5
EXIST. TRANSFER PUMP
T3 60A SWITCH
DRY WELL
14" 90° BEND (REMAIN)
10"x18" REDUCER
INSTALL 3/4" PVC DRAIN
PUMP #4
PUMP #3
PUMP #2
PUMP #1
10" DIP
CONSTRUCT STEEL PLATFORM
HORIZONTAL SPLIT CASE PUMP
8"x10" REDUCER
10" CHECK VALVE
5 1/2" HIGH CONCRETE CURB
14"x10" WYE (TYP OF 3)
LOUVERED OPENING
CONCRETE
10" 90° BEND
14" DIP
ALTERNATIVE 1
ALTERNATIVE 2
10" GATE VALVE
10"x14" REDUCER
EXISTING 14" GATE VALVE (REMOVE AND REPLACE)
12" TRANSFER ℄ EL 14.1
12" BYPASS ℄ EL 14.3
TP 5-1
TP 5-2
TP 5-3
PROPOSED ELECTRICAL BUILDING F.F. EL = 18.00'
CONDENSER UNIT (CU) SLAB (SEE STRUCTURAL DRAWINGS)
CU-1
14" LINE STOP
BOLLARD (TYP)
14" TO DISCHARGE SYSTEM
DRYWELL

BID SET

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DRAWN: H.L.N.
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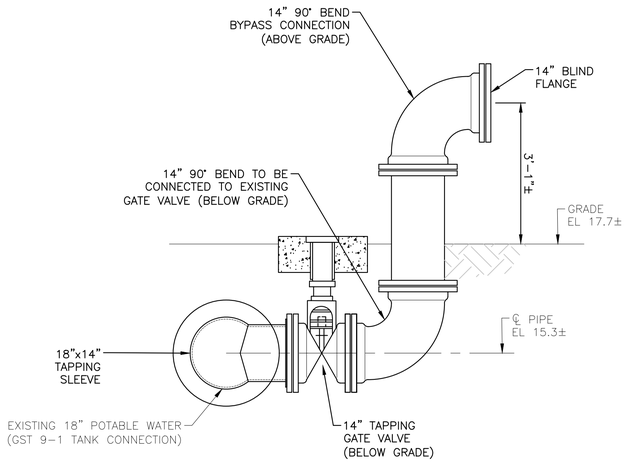
ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: M-4

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

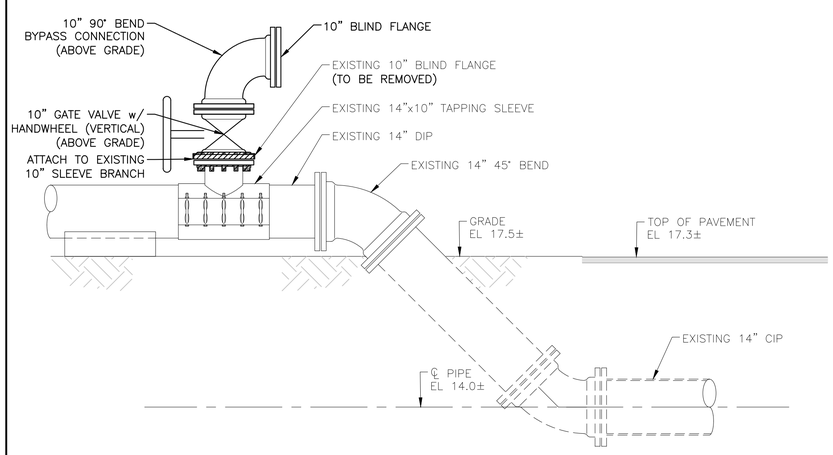
PROPOSED HIGH SERVICE PUMP BUILDING ALTERNATIVES 1 AND 2

DATE: APRIL 2020
SHEET: 11 of 41
DRAWING: M-4

Date\Time : Thu, 23 Apr 2020 - 6:57pm
Path\Name : C:\Users\TSHEN\Documents\VMN Projects\LANTT 181052-High Service Pump Imp\181052M_X_D_P-1.dwg
Current Plotstyle : ByColor Layout Tab: M-4
Acad Version : R22.0s (LMS Tech)
User Name : tshen



DETAIL A – SECTION
N.T.S.



DETAIL B – SECTION
N.T.S.

BID SET

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BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: M-5

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

MECHANICAL DETAILS

DATE: APRIL 2020
SHEET: 12 of 41
DRAWING: M-5

Date\Time : Thu, 23 Apr 2020 - 6:57pm
Path\Name : C:\Users\79HLN\Documents\HW\Projects\LANT 181052-High Service Pump Imp\181052M_P_D_1_M-5.dwg
Current Plotstyle : ByColor Layout Tab: M-5
Acad Version : R22.0s (LMS Tech)
User Name : 79JHN

GENERAL NOTES

1. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH JOB SPECIFICATIONS AND ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND SITE DRAWINGS.
2. ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
3. THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURES AND SEQUENCE TO INSURE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING ERECTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUYS OR TIE DOWNS.
4. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE REQUIREMENTS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AND OTHER GOVERNING AUTHORITIES WHEN REMOVING PAINT. SEE THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

DESIGN CODE AND LOADS:

DESIGNED IN ACCORDANCE WITH FLORIDA BUILDING CODE 2017 (FBC)

ROOF LL = 30 PSF DL = 70 PSF
FLOOR LL = 100 PSF

WIND DESIGN IN ACCORDANCE WITH ASCE 7-10:

$VELOCITY_{ULT}$ = 181 MPH (3 SEC.)
$VELOCITY_{ASD}$ = 140.2 MPH (3 SEC.)
RISK CATEGORY III
EXPOSURE = C
GCpi = ±0.18
q_z = 36.3 PSF (SERVICE)

SEISMIC DESIGN DATA:

RISK CATEGORY III
I_e = 1.5
S_s = 0.05
S_1 = 0.03
SITE CLASS = D
S_{Ds} = 0.053
S_{D1} = 0.048
SEISMIC DESIGN CATEGORY = A
R = 2
C_s = 0.004
V = 0.004W

GEOTECHNICAL DESIGN DATA:

ALLOWABLE VERTICAL FOUNDATION PRESSURE = 2,500 PSF
ALLOWABLE LATERAL BEARING PRESSURE = N/A

GROUND SNOW LOAD = 0 PSF

FLOOD ZONE X

ELEVATION DATA:

1. ALL ELEVATIONS SHOWN REFER TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD 29).

MISCELLANEOUS:

1. GENERAL CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF DUCT OPENINGS, GRILLES, LOUVERS, ETC., WITH THE MECHANICAL CONTRACTOR BEFORE PROCEEDING WITH THE WORK.
2. ALL WOOD IN CONTACT WITH MASONRY, CONCRETE, OR STEEL SHALL BE PRESSURE-TREATED.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS WITH THE DRAWINGS PRIOR TO CONSTRUCTION AND FABRICATION. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE CONSTRUCTION.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL PERTINENT LOCAL, STATE, AND FEDERAL BUILDING REGULATIONS.
5. ALL FASTENERS TO BE STAINLESS STEEL A316.
6. GENERAL CONTRACTOR SHALL VERIFY SIZE AND LOCATION OF EXISTING PIPES, CONDUIT AND EQUIPMENT, ETC., BEFORE PROCEEDING WITH THE WORK.

CONCRETE NOTES:

1. MINIMUM CONCRETE COVER SHALL BE: (INCHES)

SLAB:	2
BEAMS AND COLUMNS:	1.5
TIE COLUMNS:	0.75
EXPOSED UNPROTECTED CONCRETE:	2
FORMED CONCRETE BELOW GRADE:	3
UNFORMED CONCRETE BELOW GRADE:	4

2. CONCRETE CONSTRUCTION TECHNIQUES SHALL CONFORM TO THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 301).
3. SPREAD BARS AROUND SMALL OPENINGS AND SLEEVES IN SLABS WHERE POSSIBLE. DISCONTINUE BARS AT LARGE OPENINGS WHERE NECESSARY AND PROVIDE AN AREA OF REINFORCING EQUAL TO THE INTERRUPTED REINFORCING, DISTRIBUTED EACH SIDE OF OPENING (TOP AND BOTTOM).
4. ALL OPENINGS IN CONCRETE SLABS OR WALLS OVER 12 INCHES SQUARE SHALL HAVE ONE #5 BY 5 FEET DIAGONAL IN EACH CORNER IN THE CENTER OF THE SLAB OR WALL.
5. REINFORCING STEEL IN FOOTINGS SHALL BE ASSEMBLED AS MATS WITH BARS EQUALLY SPACED AND WIRED TOGETHER AT EACH INTERSECTION BEFORE CONCRETE IS PLACED.
6. CENTER ALL FOOTINGS ON WALL OR COLUMN ABOVE UNLESS OTHERWISE INDICATED.
7. FOOTING ELEVATIONS ARE TO TOP OF FOOTING (T.F.) AND SLAB ELEVATIONS ARE TO TOP OF SLAB (T.S.).
8. DOWEL WALL REINFORCING TO FOOTING WITH SAME SIZE AND NUMBER OF DOWELS AS VERTICAL BARS ABOVE.
9. NORMAL WEIGHT CONCRETE (145 PCF) 28 DAY COMPRESSIVE STRENGTH: FOUNDATIONS, SLAB AND TIE-BEAMS = 5,500 PSI (PEA GRAVEL MIX).
10. MAXIMUM WATER TO CEMENT RATIO = 0.40.
11. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185, FREE FROM SCALE, OIL, AND RUST AND PLACED IN ACCORDANCE WITH THE TYPICAL PLACING DETAILS OF ACI STANDARDS AND SPECIFICATIONS. MINIMUM LAP SHALL BE 6 INCHES.
12. REINFORCEMENT SHALL BE ASTM A615 GRADE 60.

FORMWORK AND SHORING:

1. NO STRUCTURAL CONCRETE SHALL BE STRIPPED UNTIL IT HAS REACHED AT LEAST TWO-THIRDS OF THE 28 DAY DESIGN STRENGTH. DESIGN, ERECTION AND REMOVAL OF ALL FORMWORK, SHORES AND RE-SHORES SHALL MEET THE REQUIREMENTS SET FORTH IN ACI STANDARDS 347 AND 301.

CHEMICAL ANCHORS:

1. SHALL BE AN EQUAL TWO PART EPOXY POLYMER INJECTION SYSTEM, SUCH AS ATC HS-1CC, OR ENGINEER APPROVED EQUIVALENT, INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALLERS SHALL BE TRAINED BY THE MANUFACTURER'S REPRESENTATIVE.

INSPECTIONS:

1. ALL SUB-GRADE SOIL COMPACTION AND WELDED/BOLTED STEEL CONNECTIONS SHALL BE INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 2017.

FOUNDATION:

1. THE ENTIRE BUILDING FOOTPRINT PLUS A HORIZONTAL MARGIN OF 5 FEET SHOULD BE CLEARED, GRUBBED AND STRIPPED OF ALL DELETERIOUS MATERIAL AND COMPACTED WITH A LIGHT VIBRATORY ROLLER (HAVING A MINIMUM DYNAMIC DRUM FORCE OF 4 TO 6 TON). COMPACTION SHOULD CONTINUE UNTIL THE BUILDING AREA SOILS REACH A DRY DENSITY NOT LESS THAN 98 PERCENT OF THE MODIFIED PROCTOR (ASTM D1557) MAXIMUM DRY DENSITY TO A DEPTH OF AT LEAST 12 INCHES BELOW SURFACE GRADE. INDIVIDUAL FOOTING AREAS SHOULD BE EXCAVATED, FORMED AND CONCRETED IN THE DRY. THE EXCAVATION BOTTOMS SHOULD BE DENSIFIED (TAMPED) WITH A WALK-BEHIND TYPE COMPACTOR PRIOR TO PLACEMENT OF REINFORCING STEEL. THE COMPACTIVE EFFORTS SHOULD ACHIEVE A MINIMUM OF 98 PERCENT OF THE ASTM D1557 MAXIMUM DRY DENSITY TO A DEPTH OF 12 INCHES BELOW THE FOOTING SUBGRADE SURFACE. ANY SOFT, COMPRESSIBLE OR OTHERWISE UNSUITABLE SOILS THAT ARE FOUND AT OR BENEATH THE FOOTING BOTTOMS SHOULD BE REMOVED AND REPLACED WITH STRUCTURAL BACKFILL.
2. CENTERLINES OF WALLS AND COLUMNS SHALL COINCIDE WITH THE FOUNDATION CENTERLINES, UNLESS SPECIFICALLY SHOWN OTHERWISE.
3. ELEVATION FOR THE TOP OF FOOTINGS SHALL BE 16 INCHES BELOW FINISH FLOOR, UNLESS SPECIFICALLY SHOWN OTHERWISE.
4. SLAB ON GRADE CONTRACTION JOINTS SHALL BE TOOLED OR SAW-CUT (WITHIN 6 HOURS OF POURING) JOINT PATTERN SHALL BE APPROXIMATELY SQUARE WITH NO DIMENSION EXCEEDING 35 FEET IN ANY DIRECTION AND SHALL INTERSECT AT ALL COLUMN LOCATIONS PROVIDE "DIAMOND" PATTERN AROUND ALL COLUMNS - TYPICAL.
5. ALL SLABS ON GRADE SHALL BE POURED OVER A 10 MIL. VAPOR BARRIER OVER COMPACTED FILL WITH TERMITE TREATMENT.

CONCRETE MASONRY NOTES:

1. REINFORCED CONCRETE MASONRY CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES" (ACI 530).
2. ALL MASONRY CELLS SHALL BE GROUTED/FILLED SOLID ABOVE AND BELOW GRADE.
3. MASONRY WALLS SHALL CURE AT LEAST TWENTY-FOUR HOURS BEFORE GROUTING.
4. WHEN GROUTING IS STOPPED FOR ONE HOUR OR LONGER, THE GROUT SHALL BE STOPPED 1.5 INCHES BELOW THE TOP OF THE UPPERMOST UNIT.
5. GROUT SHALL BE PLACED IN LIFTS NOT TO EXCEED 11 FEET 4 INCHES MAXIMUM.
6. VERTICAL WALL REINFORCING SHALL BE DOWELED TO FOOTING BELOW AND TO BEAM ABOVE.
7. PROVIDE HORIZONTAL REINFORCING WIRES EVERY OTHER COURSE IN EXTERIOR WALLS.
8. MASONRY WALLS SHALL BE BRACED TO RESIST LATERAL LOADS UNTIL ADEQUATE BRACING IS PROVIDED BY THE OTHER COMPONENTS OF THE STRUCTURE.
9. GROUTED CELLS WITH A #6 REINFORCING BAR SHALL BE PLACED AT ALL DOOR AND WINDOW JAMBS AND AS OTHERWISE INDICATED.
10. FILL MASONRY CELLS AT DOOR AND WINDOW JAMBS SOLID WITH MORTAR OR GROUT.
11. MASONRY GROUT SHALL BE MIXED WITH SUFFICIENT WATER TO GIVE A FLUID CONSISTENCY WITHOUT SEGREGATION OF MATERIALS.
12. GROUT SLUMP TO BE MAINTAINED BETWEEN 10 AND 11 INCHES.

EXTERIOR CONCRETE MASONRY PROTECTIVE COATING:

SURFACE PREPARATION:

REMOVE ANY OIL, GREASE, CHALK, LOOSE COATINGS, AND OTHER CONTAMINANTS BY PRESSURE WASHING WITH A MINIMUM 3,500 PSI, POTABLE WATER.

FEATHER ALL TIGHTLY ADHERED EDGES.

COATING SYSTEM:

PRIME COAT: APPLY OVERALL (1) COAT OF TNEMEC SERIES 151 ELASTO-GRIP FC WATERBORNE EPOXY SEALER APPLIED AT THE RATE OF 1.0 MIL DFT.

STRIPE COAT: WITH A BRUSH, STRIPE ALL HAIRLINE CRACKS WITH TNEMEC SERIES 156 ENVIROCRETE ELASTOMERIC ACRYLATE.

INTERMEDIATE COAT: APPLY OVERALL (1) COAT OF TNEMEC SERIES 156 ENVIROCRETE ELASTOMERIC ACRYLATE APPLIED AT THE RATE OF 4.0 – 6.0 MILS DFT.

FINISH COAT: APPLY OVERALL (1) COAT OF TNEMEC SERIES 156 ENVIROCRETE ELASTOMERIC ACRYLATE APPLIED AT THE RATE OF 4.0 – 6.0 MILS DFT.

PRESTRESSED KEYSTONE JOISTS:

1. PRESTRESSED KEYSTONE JOISTS AS MANUFACTURED BY STRUCTURAL PRESTRESSED INDUSTRIES, INC. (MEDLEY, FLORIDA) ARE USED AS BASIS OF DESIGN. CONTRACTOR MAY SUBMIT ALTERNATE MANUFACTURE TO THE ENGINEER FOR APPROVAL.
2. PRESTRESSED KEYSTONE JOISTS SHALL BE NORMAL WEIGHT CONCRETE (145 PCF) 28 DAY COMPRESSIVE STRENGTH = 6,000 PSI.
3. MAXIMUM WATER CEMENT RATIO = 0.40.
4. UNISTRUT INSERTS SHALL BE IMBEDDED INTO THE LOWER STEM AT THE TIME OF CASTING.

FINISHES:

1. ALL EXTERIOR BUILDING WALL SURFACES SHALL RECEIVE A NEW STUCCO FINISH AND PAINT TO MATCH THE EXISTING EXTERIOR FINISH. COLOR TO BE CHOSEN BY THE TOWN.
2. ALL INTERIOR BUILDING WALLS SHALL BE PAINTED. COLOR TO BE CHOSEN BY THE TOWN.
3. ALL EXTERIOR BUILDING APPURTENANCES SHALL BE REMOVED AND STORED DURING STUCCOING AND PAINT COATING. PIPES AND COMPONENTS INCLUDING LOUVERS, DOORS AND WINDOWS SHALL REMAIN IN PLACE BUT SHALL BE PROTECTED AND UNDISTURBED.

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DRAWN: D.A.M.
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APPROVED: J.R.B.

JEFFREY R. BERGMANN, PE
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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: _____

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

GENERAL NOTES

DATE: APRIL 2020
SHEET: 13 of 41
DRAWING: S-1

Acad Version : R22.0s (LMS Tech)
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Date\Time : Mon, 27 Apr 2020 - 3:03pm
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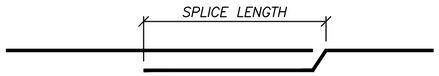
Current Plotstyle : ByColor
Layout Tab: S-1 GENERAL NOTES

REINFORCED CONCRETE LAP SPLICES

REINFORCING BAR #	BAR DIA	DEVELOPMENT LENGTH	
		CLASS "B"	CLASS "A"
3	0.375	23.00	18.00
4	0.500	31.00	24.00
5	0.625	39.00	30.00
6	0.750	46.00	36.00
7	0.875	54.00	42.00
8	1.000	62.00	47.00
9	1.128	69.00	54.00
10	1.270	78.00	60.00
11	1.410	87.00	67.00
14	1.693	104.00	80.00
18	2.257	138.00	107.00

** A CLASS "B" SPLICE SHALL BE USED UNLESS OTHERWISE NOTED ON THE PLANS*

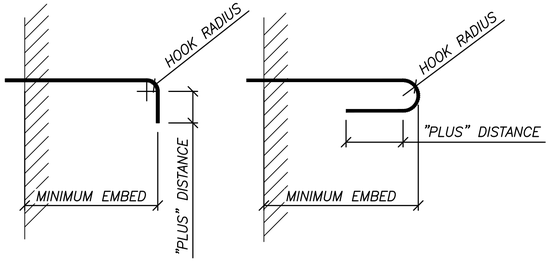
TABLE IS FOR f'c = 4 ksi, fy = 60 ksi



LAP SPLICES
NOT TO SCALE

ANCHORAGE AND DOWELS

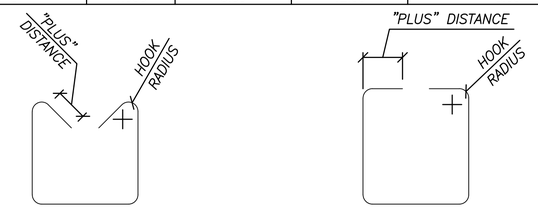
REINFORCING BAR #	BAR DIA	STANDARD HOOK (INCHES)		HOOK RADIUS	
		180° HOOK PLUS	90° HOOK PLUS	INCHES TO INSIDE OF BEND	MINIMUM EMBEDMENT
3	0.375	2.50	4.50	2.25	6.00
4	0.500	2.50	6.00	3.00	7.00
5	0.625	2.50	7.50	3.75	9.00
6	0.750	3.00	9.00	4.50	10.00
7	0.875	3.50	10.50	5.25	12.00
8	1.000	4.00	12.00	8.00	14.00
9	1.128	4.50	13.50	9.02	15.00
10	1.270	5.00	15.00	10.16	17.00
11	1.410	5.50	16.50	11.28	19.00
14	1.693	7.00	21.00	16.93	23.00
18	2.257	9.00	27.00	22.57	30.00



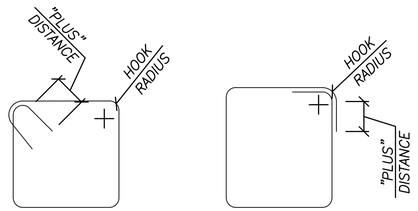
DOWELING DETAILS
NOT TO SCALE

TIES AND STIRRUPS

REINFORCING BAR #	BAR DIA.	STANDARD HOOK (INCHES)		HOOK RADIUS
		135° HOOK PLUS	90° HOOK PLUS	INCHES TO INSIDE OF BEND
3	0.375	2.25	2.25	2.25
4	0.500	3.00	3.00	3.00
5	0.625	3.75	3.75	3.75
6	0.750	4.50	9.00	4.50
7	0.875	5.25	10.50	5.25
8	1.000	6.00	12.00	8.00



STIRRUP BENDING DETAILS
NOT TO SCALE



TIE BENDING DETAILS
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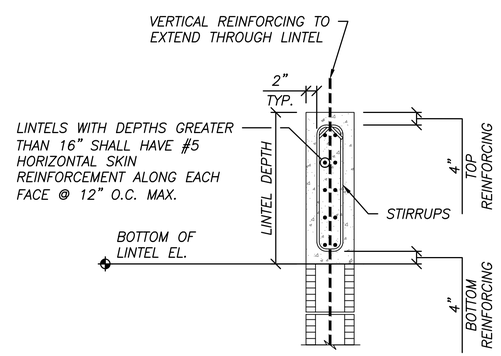


LINTEL DETAIL
NOT TO SCALE

CONCRETE BEAM/TIE BEAM SCHEDULE

MARK	SIZE (W x H)	REINFORCEMENT				BOTTOM OF BEAM ELEVATION ABOVE FINISH FLOOR	REMARKS
		BOTT	TOP	MID	STIRRUPS		
BB1	8" x 8"	2 #6	1 #6	-	-	(-) 0'-8" / 8'-0"	SINGLE COURSE MASONRY
CB1	8" x 12"	1 #5	2 #5	-	#4 @ 16" O.C.	VARIES	CONCRETE CLOSURE BEAM
TB1	8" x 24"	2 #6	2 #6	2 #5	#4 @ 16" O.C.	10'-8"	CONCRETE TIE BEAM
TB2	8" x 16"	2 #6	2 #6	2 #5	#4 @ 16" O.C.	10'-8"	CONCRETE TIE BEAM
TB3	8" x VARIES	2 #6	2 #6	2 #5	#4 @ 16" O.C.	10'-8"	DEPTH VARIES FROM 16" TO 24"

FOOTING SCHEDULE

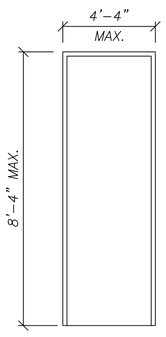
MARK	SIZE (W x L)	THICKNESS (T)	REINFORCEMENT	REMARKS
F30.15	3'-0" x CONT.	15"	#5 @ 12" O.C. EACH WAY TOP & BOTTOM	

MASONRY WALL SCHEDULE

MARK	BLOCK	REINFORCEMENT	
		VERTICAL	HORIZONTAL
MW1	8"	#6 @ 16" O.C.	9 GA. TRUSS @ 16" O.C.

LINTEL SCHEDULE

MARK	OPENING WIDTH	REINFORCEMENT				BOTTOM OF BEAM ELEVATION ABOVE FINISH FLOOR	REMARKS
		BOTT	TOP	MID	STIRRUPS		
L1	3'-4"	2 #5	-	-	-	XX	EXTEND 8" BEYOND OPENING BOTH SIDES
L2	4'	2 #6	2 #6	-	#3 @ 16" O.C.	VARIES	EXTEND 8" BEYOND OPENING BOTH SIDES



DOOR FRAME A
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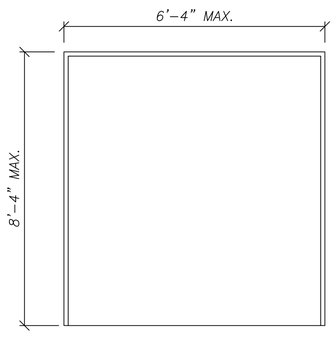

DOOR FRAME B
NOT TO SCALE

DOOR SCHEDULE

DOOR NO.	DOOR SIZE W x H	DOOR HARDWARE GROUP	DOOR					FRAME		MIAMI-DADE NOA NUMBER/ FLORIDA APPROVED NUMBER	REMARKS
			DOOR	FRAME	THICKNESS	MATERIAL	FINISH	MATERIAL	FINISH		
1	4' x 8'	1	A	A	1.75"	METAL	MFGR	METAL	GALV	17-1102.01	SINGLE MAN DOR
2	6' x 8'	2	B	B	-	GALV	MFGR	METAL	GALV	17-1102.01	DOUBLE MAN DOOR

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ENGINEER NO.: 181052.40
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TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

MASONRY SCHEDULES

DATE: APRIL 2020
SHEET: 14 of 41
DRAWING: S-2

Acad Version : R22.0s (LMS Tech) User Name : DoveMizelle
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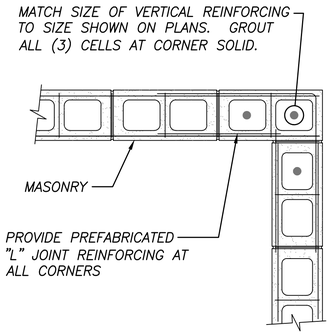


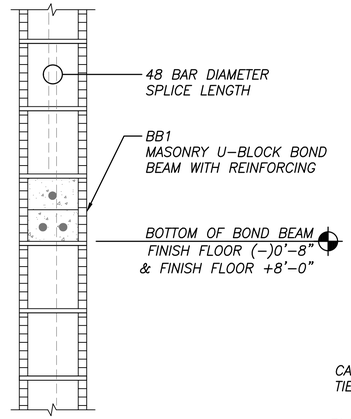
PLAN VIEW

TYPICAL MASONRY DETAIL

NOT TO SCALE

BOND BEAM NOTES:

1. WHERE HEIGHT OF MASONRY WALL SEGMENT EXCEEDS 12 FEET, INTERMEDIATE BOND BEAM IS REQUIRED.
2. BOND BEAM REINFORCEMENT MUST BE CONTINUOUS, HOOK BARS INTO REINFORCED JAMB AT WALL OPENINGS.
3. OMIT BOND BEAMS WHERE IT COINCIDES WITH OPENING HEADERS (LINTELS/BEAMS), REINFORCEMENT MUST BE CONTINUOUS AT SUCH LOCATIONS.

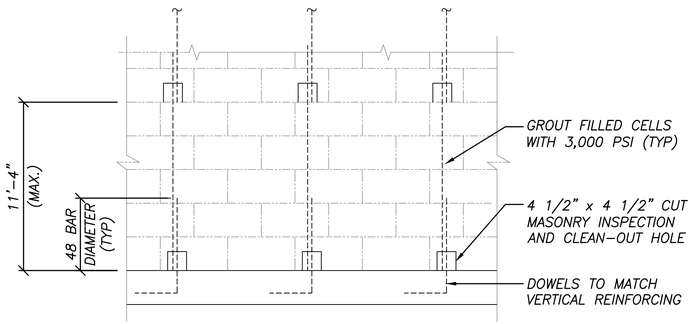


TYPICAL BOND BEAM DETAIL

NOT TO SCALE

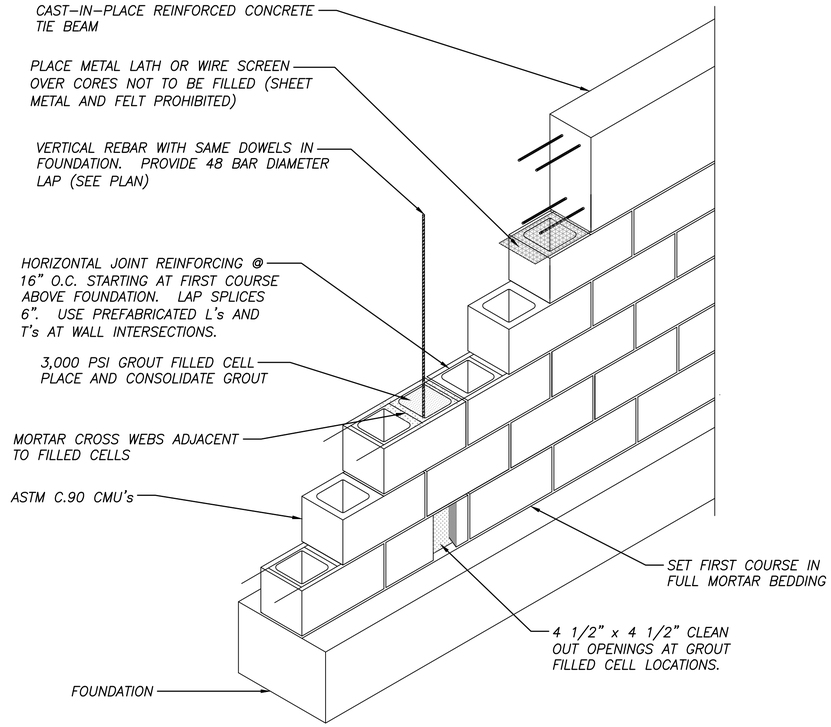
MASONRY WALL NOTES:

1. WALL SEGMENTS SHALL BE REINFORCED WITH 9 GA. GALVANIZED LATERAL REINFORCING @ 16 INCHES O.C. HORIZONTAL EXTEND REINFORCING 6 INCHES INTO POURED ELEMENTS AND AROUND ENCASED STEEL.
2. ADJACENT TO ANY EXTERIOR WALL OPENING OR PROPOSED FUTURE OPENING SHOWN, PLACE ONE #6 VERTICAL IN CELL GROUTED SOLID, FULL HEIGHT.
3. ALL MASONRY REINFORCED CELLS SHALL BE FILLED WITH 3,000 PSI GROUT MIX.



TYPICAL MASONRY FILLED CELL DETAIL

NOT TO SCALE



TYPICAL MASONRY WALL CONSTRUCTION

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TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

MASONRY WALL DETAILS

DATE: APRIL 2020
SHEET: 15 of 41
DRAWING: S-3

Acad Version : R22.0s (LMS Tech)
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Date\Time : Mon, 27 Apr 2020 - 3:03pm
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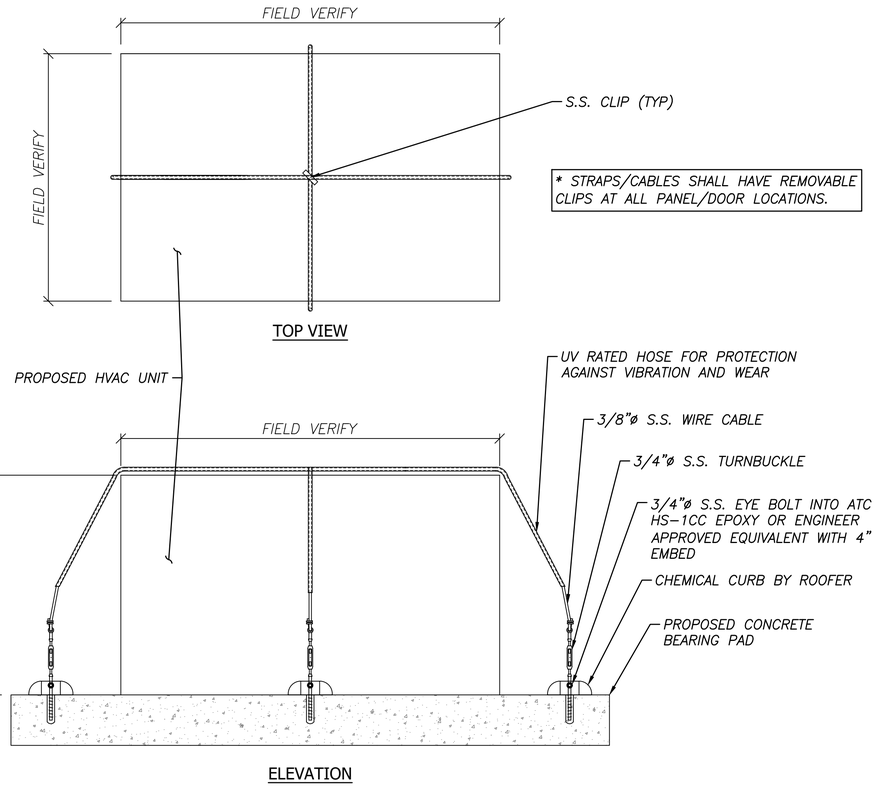
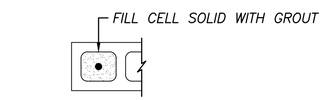
Layout Tab: S-3 MASONRY WALL DETAILS



TYPICAL CONDENSER UNIT CABLE TIE DOWN SYSTEM

NOT TO SCALE



JAMB SECTION

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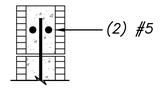

SILL SECTION

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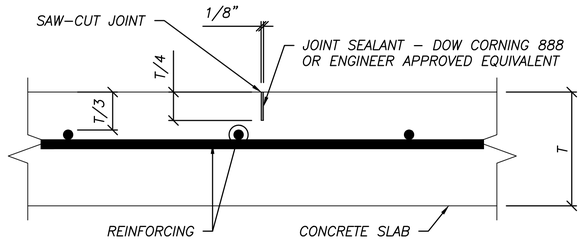

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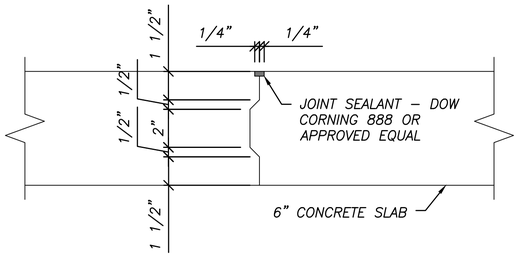

KEY WAY SECTION

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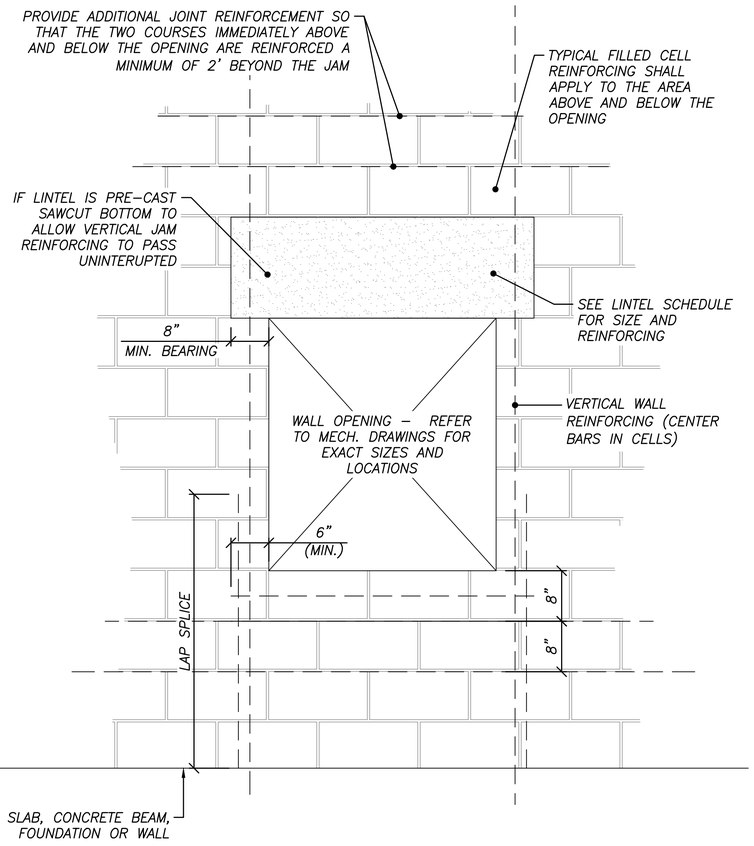

TYPICAL MASONRY WALL OPENING ELEVATION

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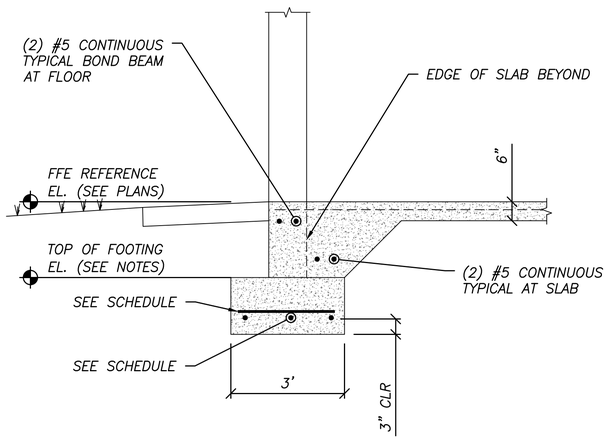

EXTERIOR WALL OPENINGS

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BID SET

NO.	DATE	ISSUED FOR	APRV'D BY

DESIGNED: J.R.B.
DRAWN: D.A.M.
CHECKED: A.S.
APPROVED: J.R.B.

JEFFREY R. BERGMANN, PE
No. 50159

BAXTER & WOODMAN Consulting Engineers
477 S. Rosemary Avenue, Suite 330, West Palm Beach, Florida 33401
Phone: 561-655-6175 ● Fax: 561-655-6179
www.baxterwoodman.com EB-31795

VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: _____

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

MASONRY WALL DETAILS

DATE: APRIL 2020
SHEET: 16 of 41
DRAWING: S-4

Acad Version : R22.0s (LMS Tech) User Name : Dave.Mizelle
Date\Time : Mon, 27 Apr 2020 - 3:03pm Path\Name : C:\pwworking\wgi\d1513691\422100-ST-DETL-003.dwg
Current Plotstyle : ByColor Layout Tab: S-4 MASONRY WALL DETAILS

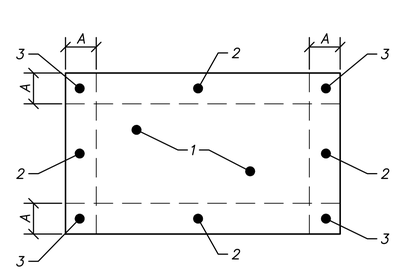
ROOF SERVICE WIND PRESSURE (PSF) COMPONENTS AND CLADDING				
EFFECTIVE WIND AREA (SQ. FT.)	OVERHANG		OVERHANG CORNER	
10	27.17	-95.08	27.17	-155.01
25	23.97	-95.08	23.97	-135.93
50	21.56	-95.08	21.56	-121.49
75	20.15	-95.08	20.15	-113.05
100	19.18	-95.08	19.15	-107.07

ROOF SERVICE WIND PRESSURE (PSF) COMPONENTS AND CLADDING						
EFFECTIVE WIND AREA (SQ. FT.)	ZONE 1		ZONE 2		ZONE 3	
10	27.17	-43.15	27.17	-75.11	27.17	-111.06
25	23.97	-41.56	23.97	-67.17	23.97	-101.52
50	21.56	-40.36	21.56	-61.15	21.56	-94.31
75	20.15	-39.66	20.15	-57.64	20.15	-90.08
100	19.18	-39.15	19.18	-57.64	19.15	-87.09

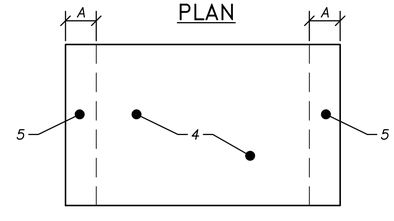
WALL SERVICE WIND PRESSURE (PSF) COMPONENTS AND CLADDING				
SIZE OF WALL OPENING (SQ. FT.)	ZONE 4		ZONE 5	
10	47.14	-51.14	47.14	-63.12
20	45.02	-49.01	45.02	-58.87
30	43.78	-47.77	43.78	-56.39
40	42.89	-46.89	42.89	-54.63
50	42.21	-46.21	42.21	-53.26
75	40.97	-44.96	40.97	-50.77
100	40.09	-44.08	40.09	-49.01

NOTE:

1. WIND DESIGN PER ASCE 7-10
   V_{ULT} = 180 MPH (3 SEC.)
   V_{ASD} = 139 MPH (3 SEC.)
   RISK CATEGORY III
   EXPOSURE C
   K_{ZT} = 1.0
   K_d = 0.85
   G = 0.85
   GCPI = ±0.18
   q_z = 41.0 PSF
2. +: INDICATES WIND PRESSURE
   -: INDICATES WIND SUCTION
3. WALL DISTANCE "A" = 3.0' (COMPONENTS AND CLADDING).
4. FOR WALL OPENINGS BETWEEN THOSE GIVEN, THE LOAD MAY BE INTERPOLATED, OTHERWISE USE THE LOAD ASSOCIATED WITH THE LOWER WALL OPENING AREA.
5. EXTERIOR GLAZED OPENINGS IN BUILDINGS SHALL COMPLY WITH FBC 2017 BY EITHER BEING DESIGNED FOR IMPACT RESISTANCE OR BEING PROTECTED BY IMPACT PROTECTIVE SYSTEMS.



PLAN



ELEVATION

2035 Vista Parkway
West Palm Beach, FL 33411
Phone No. 561.687.2220
Fax No. 561.687.1110
Cert No. 6091 - LB No. 7055

WGI PROJECT NO. 4221.00

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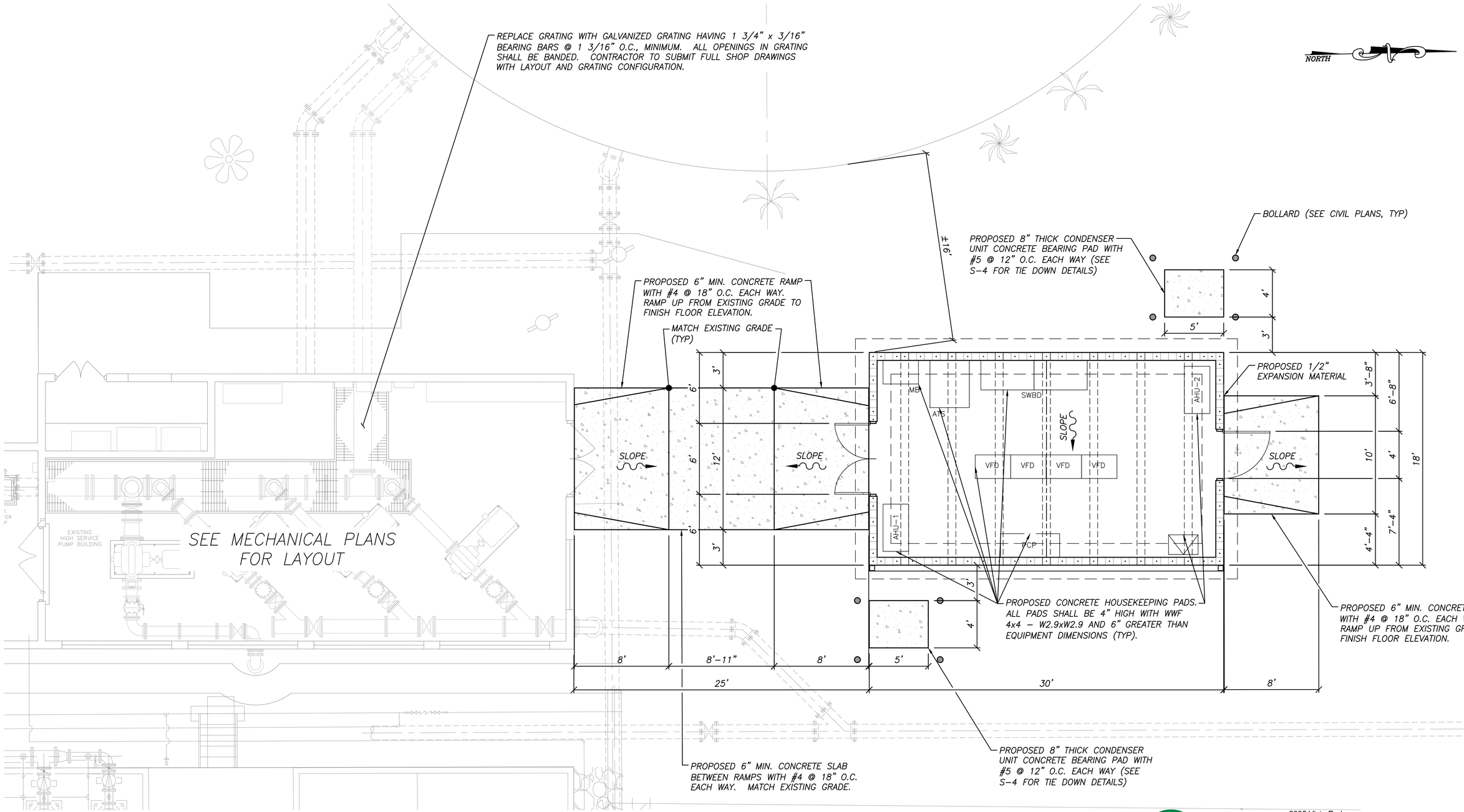
ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: _____

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

WIND LOAD DATA

DATE: APRIL 2020
SHEET: 17 of 41
DRAWING: S-5

Acad Version : R22.0s (LMS Tech)
User Name : Dove.Mizelle
Date\Time : Mon, 27 Apr 2020 – 3:03pm
Path\Name : C:\Jpwworking\wgi\d1513691\422100-ST-DETL-004.dwg
Current Plotstyle : ByColor
Layout Tab: S-5 WIND LOAD DATA



1 S-6 ELECTRICAL BUILDING SITE PLAN

GRAPHIC SCALE IN FEET 4 2 0 4

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TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING SITE PLAN

DATE: APRIL 2020
SHEET: 18 of 41
DRAWING: S-6

Acad Version : R22.0s (LMS Tech) Layout Tab: S-6 ELECTRICAL BUILDING SITE PLAN
User Name : DaveMizelle Current Plotstyle : ByColor
Date\Time : Mon, 27 Apr 2020 - 3:03pm Path\Name : C:\pwworking\wgi\d1513691\A22100-ST-PLAN-003.dwg

DOORS:

- MAN DOORS SHALL BE 4' x 8' (SINGLE) OR 6' x 8' (DOUBLE) AND SHALL MEET HVHZ IMPACT RATING REQUIREMENTS AND MEET THE REQUIREMENTS OF SPECIFICATION 08110.

DOOR FRAMES:

DOOR FRAMES SHALL BE PROVIDED IN ACCORDANCE WITH SPECIFICATION SECTION 08110.

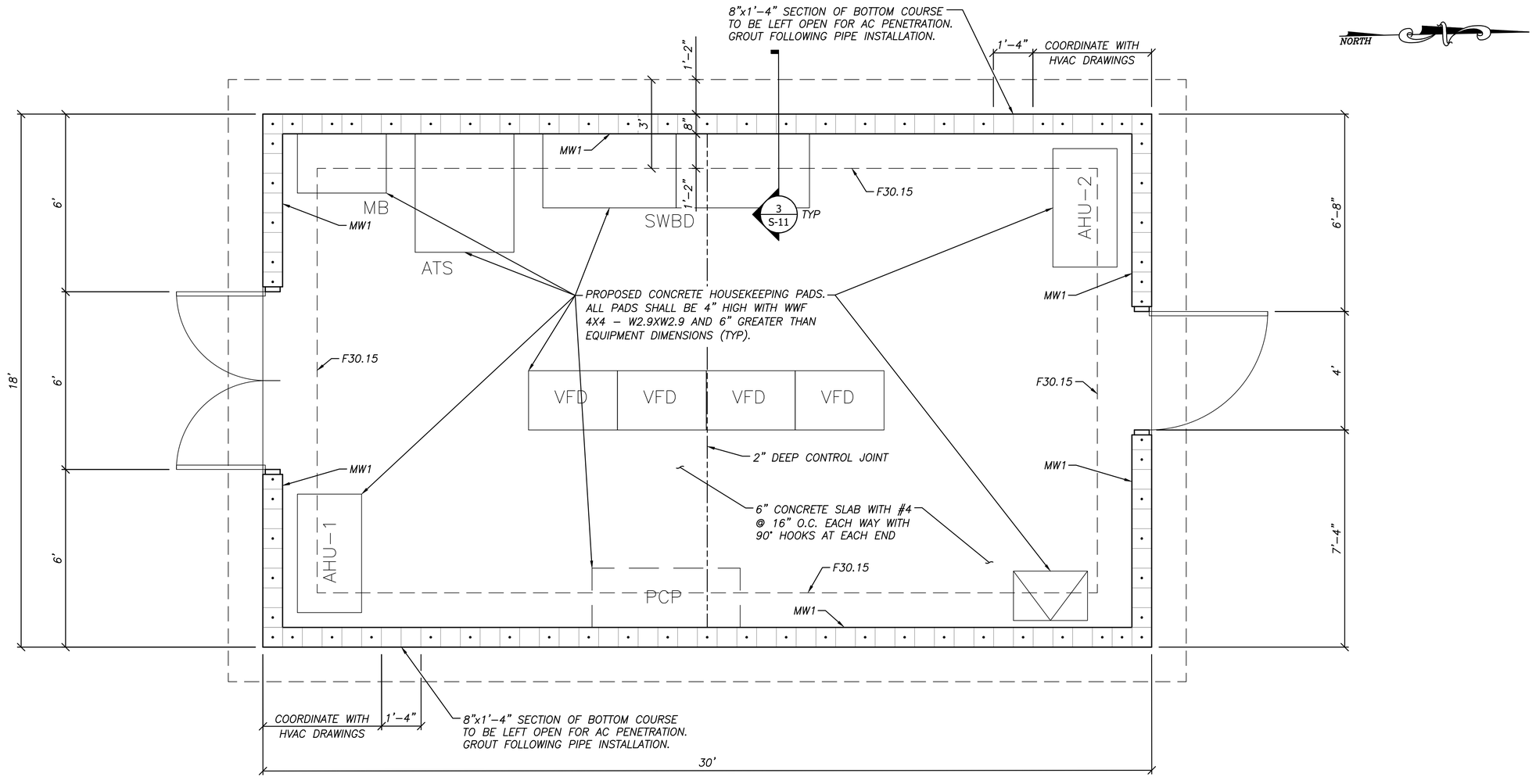
DOOR HARDWARE:

EACH DOOR SHALL BE EQUIPPED WITH A MINIMUM OF 1 1/2 PAIR OF HINGES, DOOR CLOSER, THRESHOLD, BOTTOM SEAL.

ALL INTERIOR AND EXTERIOR WALLS SHALL BE PAINTED PER SPECIFICATION 09900 COATING SYSTEM C2.

SEE MECHANICAL DRAWINGS FOR LOUVER AND FAN SCHEDULES AND HOOD DETAILS.

SEE S-2 FOR FOOTING AND MASONRY SCHEDULES.



1 S-7 ELECTRICAL BUILDING FOUNDATION - FLOOR PLAN

2 1 0 2
GRAPHIC SCALE IN FEET

2035 Vista Parkway
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Phone No. 561.687.2220
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Cert No. 6091 - LB No. 7055

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TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING FOUNDATION - FLOOR PLAN

DATE: APRIL 2020
SHEET: 19 of 41
DRAWING: S-7

Acad Version : R22.0s (LMS Tech)
User Name : DaveMizelle
Date\Time : Mon, 27 Apr 2020 - 3:03pm
Path\Name : C:\pwworking\wgi\d1513691\422100-ST-PLAN-001.dwg
Current Plotstyle : ByColor
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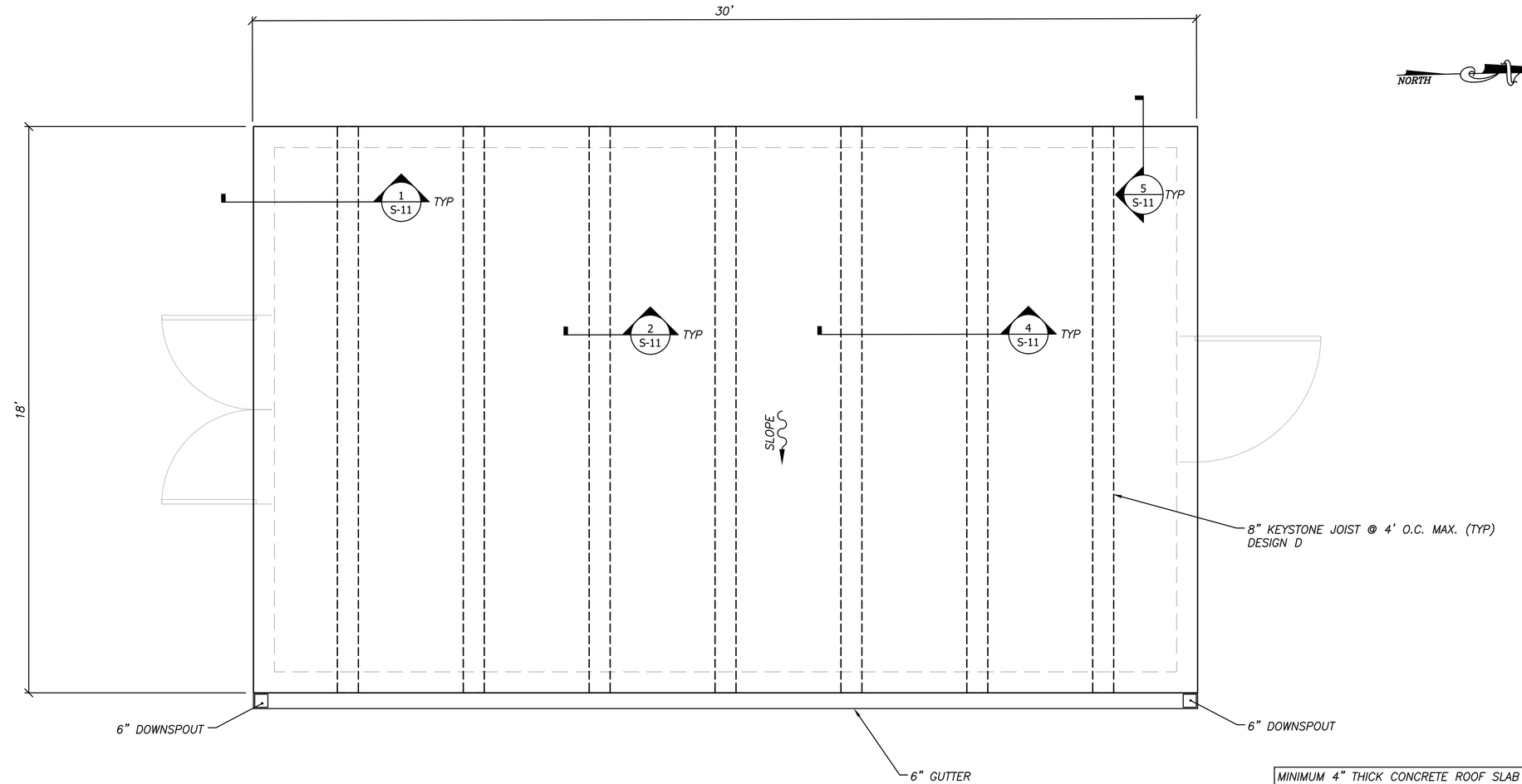

NORTH

MINIMUM 4" THICK CONCRETE ROOF SLAB WITH #4 BARS @ 6" O.C. EACH WAY. PROVIDE (3) #4 BARS @ 3" O.C. AROUND PERIMETER.

1 / S-8 ELECTRICAL BUILDING ROOF PLAN

2 1 0 2

GRAPHIC SCALE IN FEET

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Fax No. 561.687.1110
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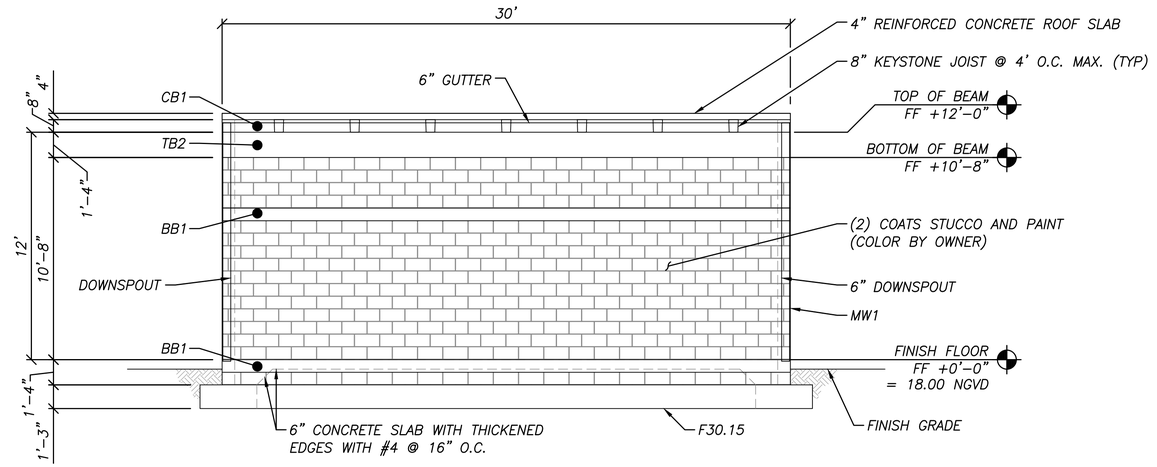
TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING ROOF PLAN

DATE: APRIL 2020
SHEET: 20 of 41
DRAWING: S-8

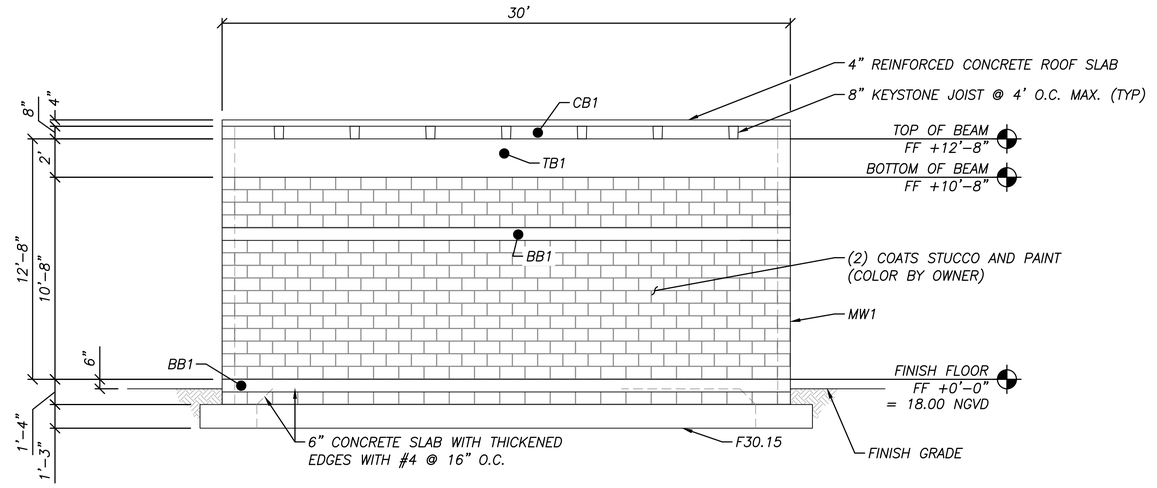
Date\Time : Mon, 27 Apr 2020 - 3:03pm
Path\Name : C:\pwworking\wgi\d1513691\422100-ST-PLAN-002.dwg
Current Plotstyle : ByColor
Layout Tab: S-8 ELECTRICAL BUILDING ROOF PLAN
Acad Version : R22.0s (LMS Tech)
User Name : Dave.Mizelle



1 / S-9 ELECTRICAL BUILDING EAST ELEVATION

4 2 0 4
GRAPHIC SCALE IN FEET

NOTE:
SEE S-2 FOR FOOTING AND MASONRY SCHEDULES.



2 / S-9 ELECTRICAL BUILDING WEST ELEVATION

4 2 0 4
GRAPHIC SCALE IN FEET

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TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING ELEVATIONS

DATE: APRIL 2020
SHEET: 21 of 41
DRAWING: S-9

Acad Version : R22.0s (LMS Tech) Layout Tab: S-9 ELECTRICAL BUILDING ELEVATIONS
User Name : Dave.Mizelle Current Plotstyle : ByColor
Date\Time : Mon, 27 Apr 2020 - 3:04pm
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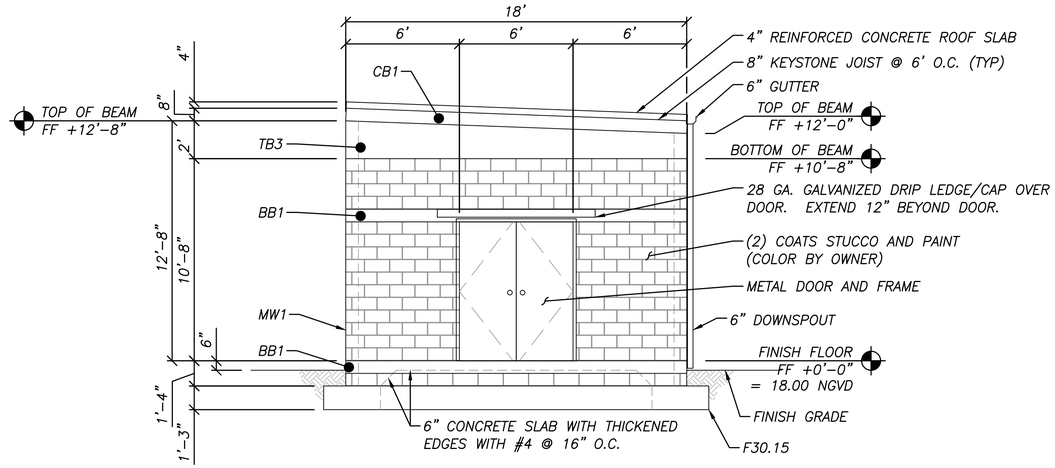
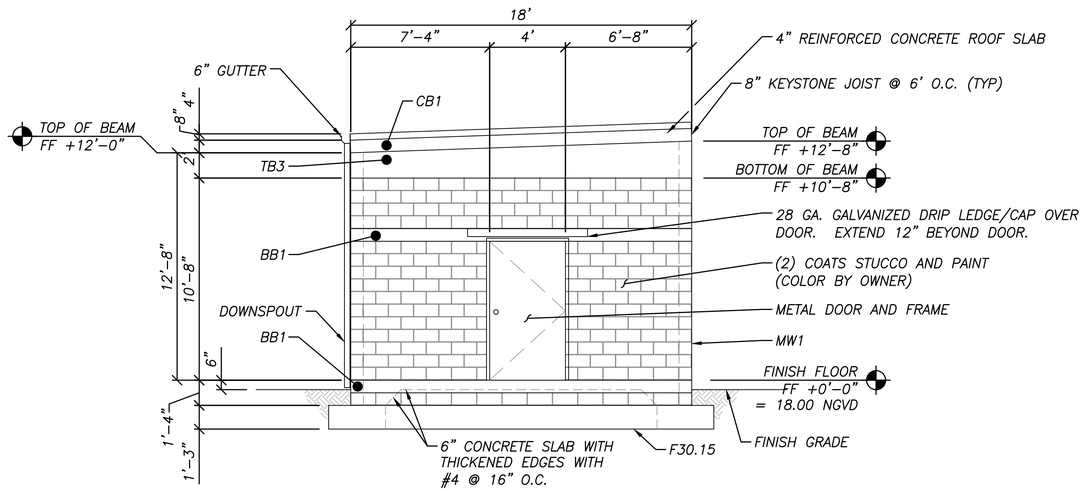


1 / S-10 ELECTRICAL BUILDING SOUTH ELEVATION

4 2 0 4
GRAPHIC SCALE IN FEET

NOTE:
SEE S-2 FOR FOOTING AND MASONRY SCHEDULES.



2 / S-10 ELECTRICAL BUILDING NORTH ELEVATION

4 2 0 4
GRAPHIC SCALE IN FEET

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TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING ELEVATIONS

DATE: APRIL 2020
SHEET: 22 of 41
DRAWING: S-10

Acad Version : R22.0s (LMS Tech) Layout Tab: S-10 ELECTRICAL BUILDING ELEVATIONS
User Name : DaveMizelle Current Plotstyle : ByColor
Date\Time : Mon, 27 Apr 2020 - 3:04pm
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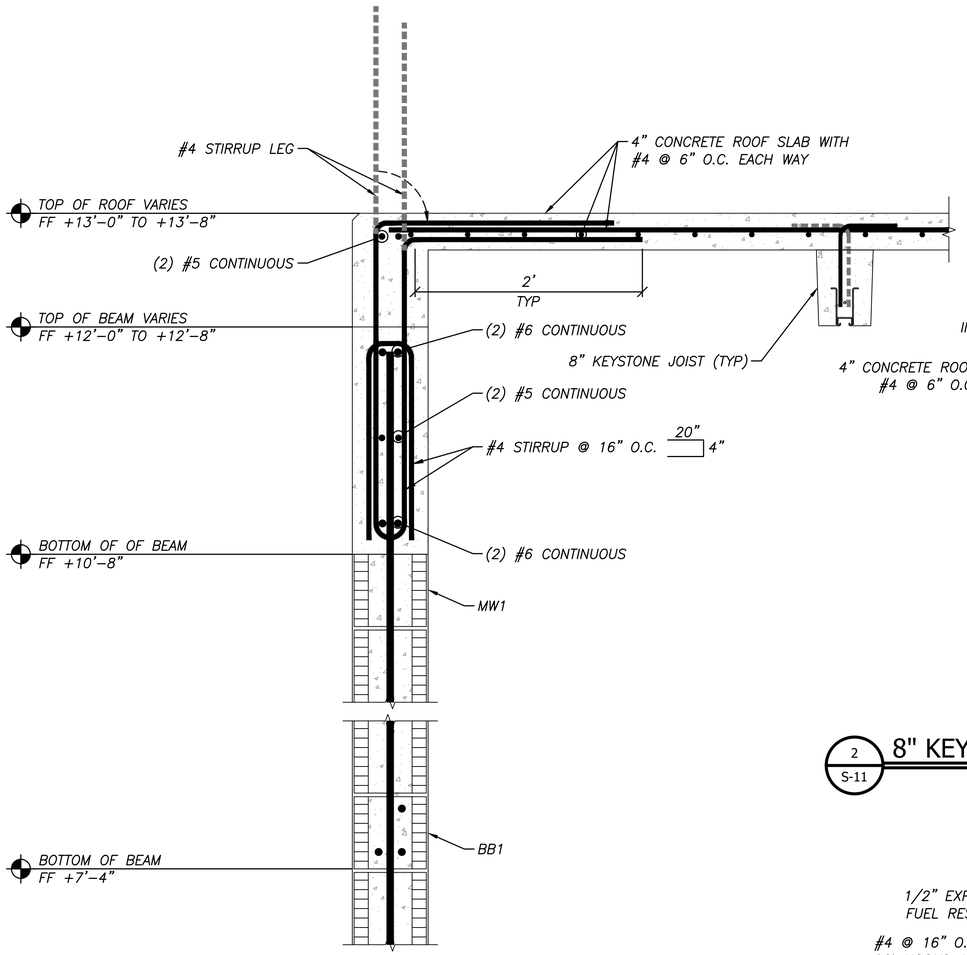
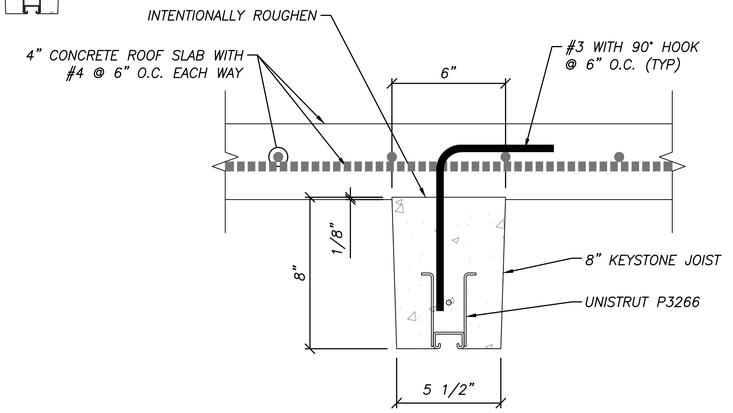


1 S-11 **8" KEYSTONE JOIST SECTION**

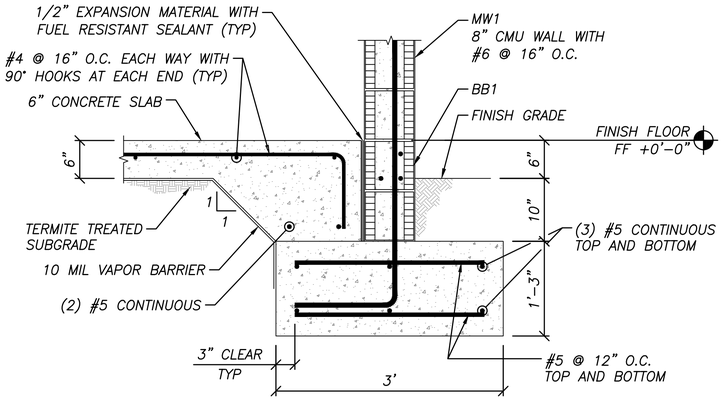
1 0.5 0 1
GRAPHIC SCALE IN FEET

NOTE:
SEE S-2 FOR FOOTING AND MASONRY SCHEDULES.



2 S-11 **8" KEYSTONE JOIST WITH UNISTRUT EMBED SECTION**

0.5 0.25 0 1
GRAPHIC SCALE IN FEET



3 S-11 **EXTERIOR WALL THICKENED EDGE SLAB SECTION**

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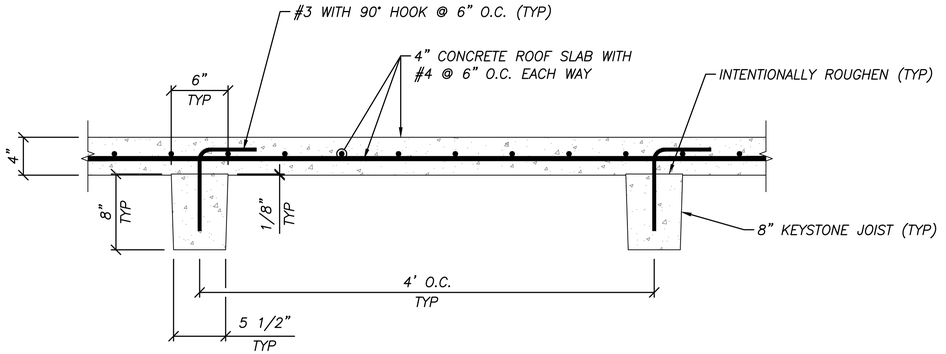
GRAPHIC SCALE IN FEET



4 S-11 **8" KEYSTONE JOIST SECTION**

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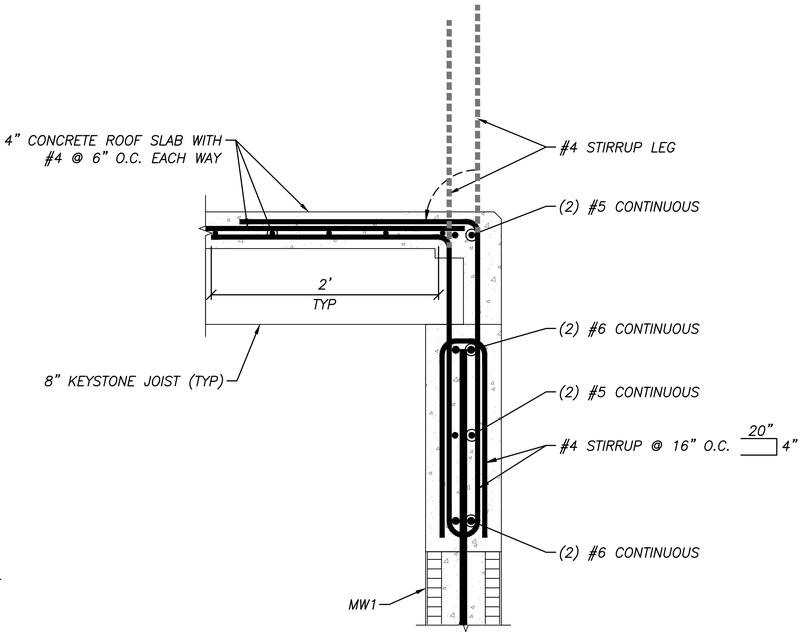
GRAPHIC SCALE IN FEET



5 S-11 **8" KEYSTONE JOIST SECTION**

1 0.5 0 1
GRAPHIC SCALE IN FEET

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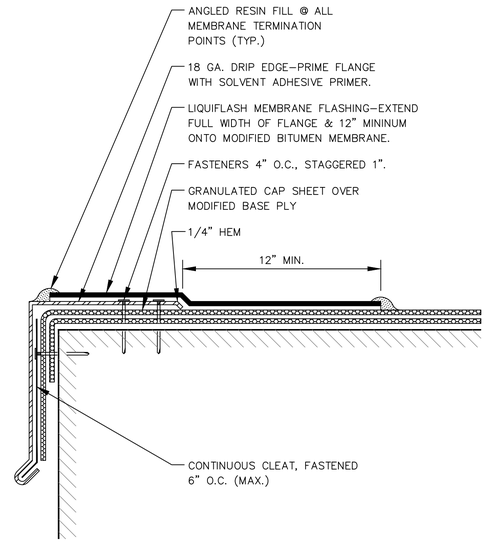
TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING DETAILS

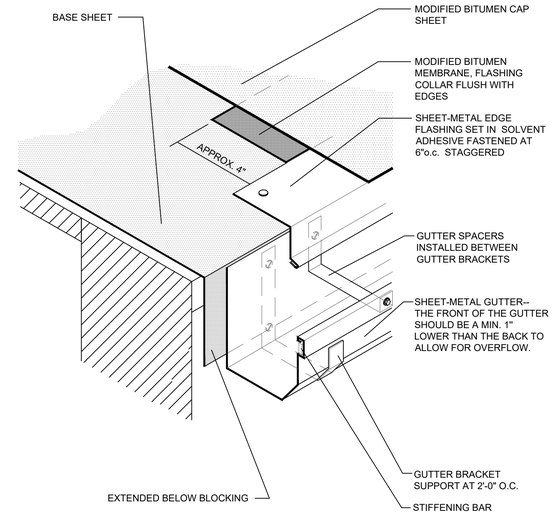
DATE: APRIL 2020
SHEET: 23 of 41
DRAWING: S-11

Acad Version : R22.0s (LMS Tech)
User Name : DoveMizelle
Date\Time : Mon, 27 Apr 2020 - 3:04pm
Path\Name : C:\pwworking\wgi\d1513691\422100-ST-DETL-005.dwg
Current Plotstyle : ByColor
Layout Tab: S-11 ELECTRICAL BUILDING DETAILS



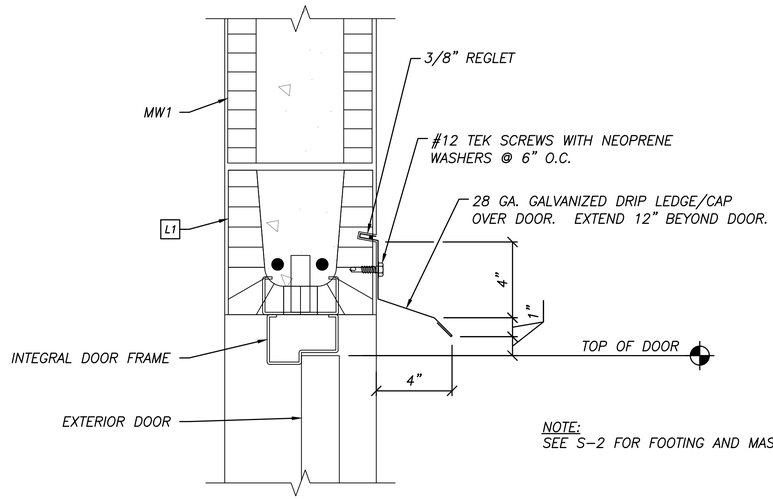
1 S-12 ROOF DRIP EDGE FLASHING SECTION

NOT TO SCALE



2 S-12 ROOF GUTTER EDGE FLASHING SECTION

NOT TO SCALE



NOTE:
SEE S–2 FOR FOOTING AND MASONRY SCHEDULES.

3 S-12 DOOR HEADER DRIP LEDGE/CAP SECTION

NOT TO SCALE

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DESIGNED: J.R.B.
DRAWN: D.A.M.
CHECKED: A.S.
APPROVED: J.R.B.

JEFFREY R. BERGMANN, PE
No. 50159

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477 S. Rosemary Avenue, Suite 330, West Palm Beach, Florida 33401
Phone: 561-655-6175 ● Fax: 561-655-6179
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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018–05
CAD REF.: _____

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING DETAILS

DATE: APRIL 2020
SHEET: 24 of 41
DRAWING: S–12

Acad Version : R22.0s (LMS Tech)
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Date\Time : Mon, 27 Apr 2020 – 3:04pm
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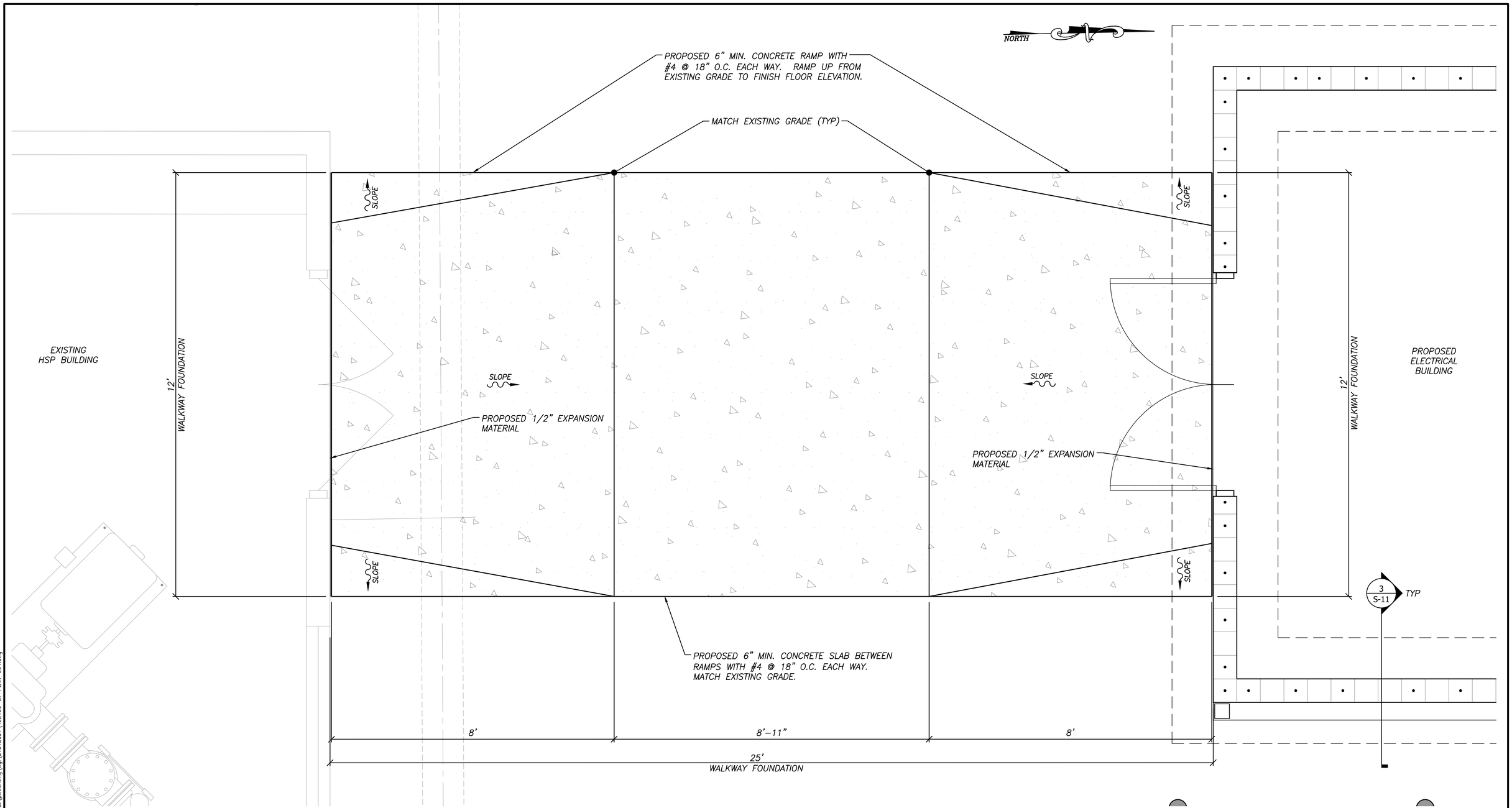
Layout Tab: S–12 ELECTRICAL BUILDING DETAILS



1 S-13 WALKWAY FOUNDATION PLAN

1 0.5 0 1

GRAPHIC SCALE IN FEET

2035 Vista Parkway
West Palm Beach, FL 33411
Phone No. 561.687.2220
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ENGINEER NO.: 181052.40
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CAD REF.: _____

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

WALKWAY FOUNDATION PLAN

DATE: APRIL 2020
SHEET: 25 of 41
DRAWING: S-13

Acad Version : R22.0s (LMS Tech) Layout Tab: S-13 WALKWAY FOUNDATION PLAN
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Date\Time : Mon, 27 Apr 2020 - 3:04pm Path\Name : C:\pwworking\wgi\d1513691\422100-ST-PLAN-004.dwg

MECHANICAL GENERAL NOTES

1. ALL MECHANICAL WORK SHALL BE GOVERNED AND INSTALLED IN COMPLIANCE WITH THE LATEST EDITION AND APPLICABLE PROVISIONS OF THE FOLLOWING CODES AND STANDARDS:
   A. FLORIDA BUILDING CODE – 2017, 6th Edition
   B. FLORIDA MECHANICAL CODE – 2017, 6th Edition
   C. FLORIDA PLUMBING CODE – 2017, 6th Edition
   D. FLORIDA ENERGY EFFICIENCY CODE – 2017, 6th Edition
   E. FLORIDA FIRE PREVENTION CODE – 2017, 6th Edition
   F. FLORIDA FUEL GAS CODE – 2017, 6th Edition
   G. FLORIDA EXISTING BUILDING CODE – 2017, 6th Edition
   H. NATIONAL ELECTRICAL CODE (NEC) – 2014
   I. NFPA 90A – INSTALLATION OF AIR CONDITIONING & VENTILATING SYSTEMS
   J. NFPA 101 – LIFE SAFETY CODE
   K. ASHRAE STANDARDS (INCLUDING 15, 55, 62.1, 90.1 & 129)
   L. ANSI
   M. SMACNA DUCTWORK STANDARDS
   N. AMERICANS WITH DISABILITIES ACT (ADA)
   O. ALL OTHER APPLICABLE FEDERAL, COUNTY AND CITY CODES REQUIRED BY LOCAL JURISDICTIONS

2. SUPPLY AND RETURN AIR DUCTWORK:

   A. ALL RECTANGULAR SUPPLY AND RETURN AIR METAL DUCTWORK SHALL BE GALVANIZED SHEET METAL, EXTERNALLY INSULATED WITH 2" THICK, 0.75 LB. DENSITY DUCT WRAP WITH A MINIMUM R-VALUE OF R-6.0. SEAL ALL DUCTWORK JOINTS AND SEAMS WITH MEDIUM VELOCITY DUCT SEALANT AND SEAL ALL INSULATION JOINTS AND SEAMS WITH FAB AND MASTIC, FOIL TAPE IS NOT ACCEPTABLE.

3. ALL DUCTWORK SHALL BE FABRICATED, CONSTRUCTED, AND INSULATED IN STRICT COMPLIANCE WITH SMACNA STANDARDS AND THE FLORIDA ENERGY EFFICIENCY CODE.

4. PROVIDE A "N.E.B.B." OR "A.A.B.C." CERTIFIED TEST AND BALANCE CONTRACTOR TO PROVIDE A COMPLETE T&B REPORT FOR ALL HVAC AIR DISTRIBUTION SYSTEMS AND EQUIPMENT AS INDICATED ON PLANS. THE T&B CONTRACTOR SHALL CONFIRM PROPER OPERATION OF ALL UNITS AND ASSOCIATED CONTROL SYSTEMS.

5. CHECK/VERIFY CLEARANCES BEFORE ORDERING MATERIALS DUE TO LIMITED SPACE AVAILABILITY. IF THE INDICATED DUCTWORK SIZES ARE UNABLE TO FIT IN THE SPACE, PROVIDE EQUIVALENT DUCT SIZES WITH ALL REQUIRED OFFSETS, TRANSITIONS, ETC., AT NO ADDITIONAL COST TO OWNER.

6. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES, DOCUMENTS AND SERVICES RELATED TO INSTALLATION OF THE WORK.

7. ALL WORK SHALL BE LOCATED TO AVOID CONFLICTS WITH OTHER TRADES. PROVIDE ADEQUATE CLEARANCE FOR PROPER OPERATION AND SERVICE OF ALL MECHANICAL EQUIPMENT.

8. DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING AND DETAIL. INSTALL DUCTWORK, EQUIPMENT AND CONTROLS IN A NEAT, WORKMANLIKE MANNER AND IN ACCORDANCE WITH GOOD PRACTICE FOR A COMPLETE, WORKABLE INSTALLATION. AVOID CONFLICTS WITH OTHER TRADE'S WORK. MAKE ADEQUATE PROVISIONS FOR PREVENTING NOISE AND VIBRATION.

9. MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AGAINST DEFECTS FOR ONE YEAR. PROVIDE A FIVE YEAR WARRANTY ON ALL COMPRESSORS.

10. COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE ORDERING.

11. CONTRACTOR SHALL PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS CLEARLY INDICATING LOCATION OF DUCTWORK AND EQUIPMENT, INCLUDING DIMENSIONS, ARRANGEMENT, RATING AND CAPACITIES OF ALL SYSTEMS.

12. DUCT SIZES SHOWN ARE MINIMUM INSIDE DIMENSIONS.

13. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS, AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

14. CONTRACTOR SHALL INCLUDE IN THE BID THE NECESSARY PROGRAMMING, WIRING AND PROCEDURES AND ALL WORK AND MATERIALS REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL TEMPERATURE CONTROL SYSTEM WHICH SHALL BE FURNISHED AND INSTALLED UNDER DIVISION 23 – MECHANICAL OF THESE CONTRACT DOCUMENTS. ALL CONTROL VOLTAGE WIRING IN EXPOSED AREAS SHALL BE IN CONDUIT.

15. INSTALL ALL THERMOSTATS AND TEMPERATURE SENSORS AT 48" A.F.F.

16. REVIEW DRAWINGS AND PROVIDE ALL WORK FOR A COMPLETE AND OPERABLE SYSTEM, INCLUDING ALL INCIDENTALS REQUIRED BY CODE AGENCIES AND LOCAL GOVERNING BODIES. ANY DISCREPANCY NOT BROUGHT TO THE ATTENTION OF THE ARCHITECT IN WRITING PRIOR TO THE BID SHALL BE CONSIDERED CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AND AS THE ENGINEER DIRECTS.

17. LOCATE AND ARRANGE EQUIPMENT INTO THE AVAILABLE SPACE IN A MANNER TO ALLOW FOR ALL WORKING PARTS TO BE ACCESSIBLE FOR MAINTENANCE AND SERVICE.

18. PRIOR TO SUBMITTING A PROPOSAL, THE CONTRACTOR SHALL VISIT THE SITE AND THOROUGHLY INSPECT ALL EXISTING CONDITIONS TO ENSURE THAT THE WORK REPRESENTED ON THE DRAWINGS AND IN THESE SPECIFICATIONS CAN BE INSTALLED AS INDICATED.

19. FURNISH TO THE OWNER, TWO COPIES OF OPERATING INSTRUCTIONS, MANUFACTURER'S PARTS DATA AND SERVICE INSTRUCTIONS.

20. PROVIDE THE NECESSARY REQUIRED NUMBER OF SUBMITTALS FOR ALL MECHANICAL EQUIPMENT, DUCTWORK, AIR DISTRIBUTION AND MATERIALS REQUIRED PER THESE PLANS AND SPECIFICATIONS IN ELECTRONIC PDF FORMAT.

21. ALL PIPING AND DUCTWORK SHALL BE NONCOMBUSTIBLE MATERIAL.

22. ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. MANUFACTURER'S SERVICE CLEARANCE FOR ALL EQUIPMENT SHALL BE MAINTAINED.

23. ALL EQUIPMENT, DUCTWORK, ETC., SHALL BE SUPPORTED AS REQUIRED TO PROVIDE A VIBRATION-FREE INSTALLATION.

24. PROVIDE A DEEP SEAL TRAP AT CONDENSATE DRAIN TO AIR CONDITIONING UNITS. RUN CONDENSATE DRAIN FROM DRAIN PAN CONNECTION TO NEAREST FLOOR DRAIN, ROOF DRAIN, CONDENSATE RISER OR DRYWELL. CONDENSATE DRAIN PIPING SHALL BE FULL SIZE OF UNIT CONNECTION. CONDENSATE PIPING INSTALLED INSIDE OF BUILDING SHALL BE TYPE 'L' COPPER OR PVC AND INSULATED PER SPECIFICATIONS.

25. STARTERS REQUIRED FOR THE MECHANICAL EQUIPMENT SHALL BE FURNISHED BY DIVISION 23 – MECHANICAL AND INSTALLED BY DIVISION 26 – ELECTRICAL. STARTERS SHALL BE COMBINATION DISCONNECT HAND-OFF AUTO TYPE WITH CONTROL TRANSFORMER AND AUXILIARY CONTACTS.

26. DISCONNECT SWITCHES REQUIRED FOR THE MECHANICAL EQUIPMENT SHALL BE PROVIDED BY DIVISION 26 – ELECTRICAL UNLESS NOTED OTHERWISE.

27. CONTRACTOR SHALL INCLUDE IN THE BID THE TRANSPORT AND DISPOSAL OR RECYCLING OF ALL WASTE MATERIALS GENERATED BY THIS PROJECT IN ACCORDANCE WITH ALL RULES, REGULATIONS AND GUIDELINES APPLICABLE.

28. ALL DUCT AND PIPE PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE PROPERLY PROTECTED WITH A UL RATED FIRESTOPPING SYSTEM.

29. COORDINATE ALL DUCT MOUNTED SMOKE DETECTORS WITH DIVISION-26 FIRE ALARM AND ELECTRICAL CONTRACTORS.

30. PROVIDE AUXILIARY DRAIN PANS WITH A FLOAT SWITCH, THAT WILL DE-ENERGIZE THE AIR HANDLER.

Split System DX Air Handling Unit Schedule

Symbol	Serving	Supply CFM	IEER (SEER)	E.S.P. (In. W.G.)	Cooling Data					Heating Data					Indoor Fan Data			
					Total BTU/HR	Sensible BTU/HR	Ent. Air Temp. DB	Ent. Air Temp. WB	Cond. Deg. F.	KW	Cap. BTU/HR	Steps	Volt.	PH.	Drive	HP	Volt.	PH.
AHU-1	Electrical Rm.	3,000	12.9	1.0	92,000	69,000	80	69	95	-	-	-	-	-	Belt	1.5	480	3
AHU-2	Electrical Rm.	3,000	12.9	1.0	92,000	69,000	80	69	95	-	-	-	-	-	Belt	1.5	480	3

Symbol	Unit Electrical Data			Physical Characteristics			Refrig. Piping		Manufacturer	Model Number	Remarks
	#Conn.	Volt.	PH.	Conf.	Dimensions LxWxH (In.)	Weight (Lbs.)	Liquid (Dia. In.)	Suction (Dia. In.)			
AHU-1	1	480	3	VERT.	48 X 26 X 54	433	1/2	1-1/8	TRANE	TWE09044B	ALL
AHU-2	1	480	3	VERT.	48 X 26 X 54	433	1/2	1-1/8	TRANE	TWE09044B	ALL

Remarks:
1. Provide R-410A refrigerant.
2. Provide drain pan float switch to shut unit down when pan is full.
3. Provide 2" filter rack with MERV 8 filter.
4. Provide thermostat mounted at 48" AFF.
5. Provide minimum 5 year parts warranty.
6. Provide 4" housekeeping pad.
7. Equal products by other manufacturers may be substituted.
8. Provide supply and return air smoke detector as indicated on floor plan.

Air Cooled Condensing Unit Schedule

Symbol	Serving	Capacity		Outdoor Fan Data				Unit Electrical Data					Compressor Data				
		BTU/HR	Cond. Deg. F.	No.	H.P. (Ea.)	Voltage	Phase	#Conn.	MCA	MOCP	Volt.	Phase	No.	RLA	LRA	Volt.	PH.
CU-1	Electrical Rm.	90,000	95	1	0.5	480	3	1	15	20	480	3	2	6.1	41	480	3
CU-2	Electrical Rm.	90,000	95	1	0.5	480	3	1	15	20	480	3	2	6.1	41	480	3

Symbol	Max Weight (Lbs.)	Refrig. Piping		Dimensions (L x W x H)	Manufacturer	Model Number	Remarks
		Liquid (Dia. In.)	Suction (Dia. In.)				
CU-1	315	1/2	1-1/8	42 x 34 x 41	TRANE	TTA09044D	ALL
CU-2	315	1/2	1-1/8	42 x 34 x 41	TRANE	TTA09044D	ALL

Remarks:
1. Provide refrigerant shut-off type service valves.
2. Provide sweat type refrigerant pipe connections.
3. Provide hard start accessory kit.
4. Provide R-410A refrigerant.
5. Provide scroll compressor with 5 year warranty.
6. Provide low ambient / head pressure control kit.
7. Provide manual reset high/low pressure switches.
8. Provide compressor time delay relay.
9. Provide housekeeping pad and rubber isolators.
10. Provide bollards as indicated on plan.

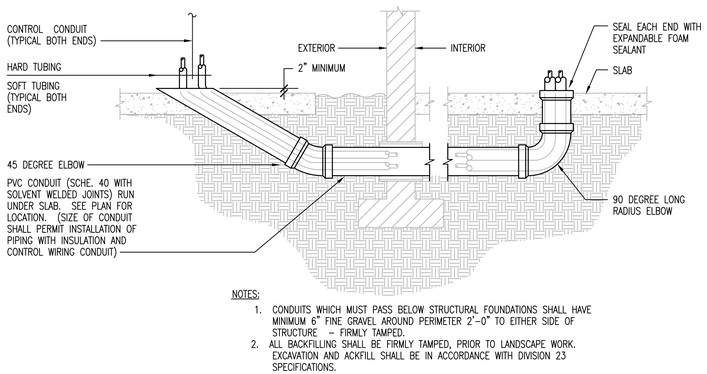
Air Distribution Schedule

Symbol	Description	Module Size	Material	Finish	Neck Size	Damper	Border Frame Type	Pattern	Max. Press. Drop	Max. N.C.	Manuf.	Model No.	Remarks
A	Surface mount louvered supply air grille with individually adjustable airfoil blade louvers and opposed blade damper operable from face.	SEE PLANS	Aluminum	Mill	Same as Diffuser Size	Yes	Surface	Double Deflection	0.10	30	MetalAire	H4004AF	ALL
B	Return intake or transfer air grille with 45 degree horizontal deflecting vanes and surface mount frame.	SEE PLANS	Aluminum	Mill	As Noted	No	Surface	N/A	0.10	30	MetalAire	RH	ALL

Remarks:
1. All grilles and diffusers shall not have an NC level greater than 30.
2. Price or metalaire or other equal products may be substituted.

SYMBOL LEGEND

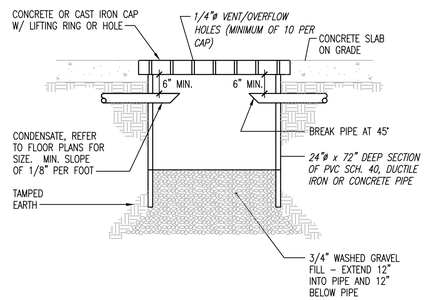
- A–XX / XXX — AIR DISTRIBUTION DEVICE (REFER TO SCHEDULE FOR LETTER DESIGNATION); AIR QUANTITY (CFM) CONNECTION SIZE
- (T) — WALL MOUNTED THERMOSTAT or TEMPERATURE SENSOR W/CONTROL WIRING, 48" AFF
- (S) — SMOKE DETECTOR
- A / M4.01 — SECTION LETTER OR NUMBER; SECTION SHEET NUMBER
- DRAWING HEX NOTE
- POINT OF REMOVAL FOR EXISTING EQUIPMENT
- POINT OF CONNECTION BETWEEN EXISTING AND NEW
- REVISION DELTA AND NUMBER



NOTES:
1. CONDUITS WHICH MUST PASS BELOW STRUCTURAL FOUNDATIONS SHALL HAVE MINIMUM 6" FINE GRAVEL AROUND PERIMETER 2'-0" TO EITHER SIDE OF STRUCTURE – FIRMLY TAMPED.
2. ALL BACKFILLING SHALL BE FIRMLY TAMPED, PRIOR TO LANDSCAPE WORK. EXCAVATION AND ACKFILL SHALL BE IN ACCORDANCE WITH DIVISION 23 SPECIFICATIONS.

UNDERGROUND REFRIGERANT PIPING DETAIL

NOT TO SCALE



CONDENSATE DRYWELL DETAIL

NO SCALE

Engley Brooks Engineering, LLC
1324 E. 24th St., Sanford, FL 32771
P: 407.804.1969 F: 407.540.9403
www.engleybrooks.com
Cert. Auth. 29772 / PE Lic. no. 57671

BID SET

NO.	DATE	ISSUED FOR	APRV'D BY

DESIGNED: MLB
DRAWN: MLB
CHECKED: MLB
APPROVED: MLB

MICHELLE L. BROOKS, P.E.
No. 57671

BAXTER & WOODMAN Consulting Engineers
477 S. Rosemary Avenue, Suite 330, West Palm Beach, Florida 33401
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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: HVAC H-1

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

HVAC SCHEDULES, DETAILS + NOTES

DATE: APRIL 2020
SHEET: 26 of 41
DRAWING: H-1

Acad Version : R23.0s (LMS Tech)
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MECHANICAL SPECIFICATIONS

DIVISION 23 – MECHANICAL

GENERAL MECHANICAL REQUIREMENTS

ALL MECHANICAL WORK SHALL BE GOVERNED AND INSTALLED IN COMPLIANCE WITH THE LATEST EDITION AND APPLICABLE PROVISIONS OF THE FOLLOWING CODES AND STANDARDS:

A. FLORIDA BUILDING CODE – 2017, 6th Edition
B. FLORIDA MECHANICAL CODE – 2017, 6th Edition
C. FLORIDA PLUMBING CODE – 2017, 6th Edition
D. FLORIDA ENERGY EFFICIENCY CODE – 2017, 6th Edition
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F. FLORIDA FUEL GAS CODE – 2017, 6th Edition
G. FLORIDA EXISTING BUILDING CODE – 2017, 6th Edition
H. NATIONAL ELECTRICAL CODE (NEC) – 2014
I. NFPA 90A – INSTALLATION OF AIR CONDITIONING & VENTILATING SYSTEMS
J. NFPA 101 – LIFE SAFETY CODE
K. ASHRAE STANDARDS (INCLUDING 15, 55, 62.1, 90.1 & 129)
L. ANSI
M. SMACNA DUCTWORK STANDARDS
N. AMERICANS WITH DISABILITIES ACT (ADA)
O. ALL OTHER APPLICABLE FEDERAL, COUNTY AND CITY CODES REQUIRED BY LOCAL JURISDICTIONS

REFER TO ALL OTHER DRAWINGS AND SPECIFICATIONS, AND BE RESPONSIBLE FOR ALL APPLICABLE PROVISIONS THEREIN. FURNISH AND INSTALL ALL NECESSARY LABOR AND MATERIALS FOR A COMPLETE SYSTEM. ANY APPLIANCES OR MATERIALS OBVIOUSLY A PART OF THE SYSTEM AND NECESSARY FOR ITS PROPER OPERATION, ALTHOUGH NOT SPECIFICALLY MENTIONED HEREIN, SHALL BE FURNISHED AND INSTALLED AS IF CALLED FOR IN DETAIL. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES, NFPA 90A, AND THE BUILDING REGULATIONS. EQUIPMENT AND MATERIALS SHALL BE NEW UNLESS OTHERWISE SPECIFIED. MECHANICAL CONTRACTOR SHALL BE LICENSED TO HANDLE CFC REFRIGERANTS.

DRAWINGS ARE GENERALLY DIAGRAMMATIC AND DO NOT NECESSARILY SHOW EVERY FITTING, OFFSET, DROP AND RISE OF RUNS, AND DETAIL. INSTALL DUCTS, EQUIPMENT, AND CONTROLS IN A NEAT, WORKMANLIKE MANNER AND IN ACCORDANCE WITH GOOD PRACTICE FOR A COMPLETE, WORKABLE INSTALLATION. AVOID CONFLICT WITH OTHER WORK; MAKE ADEQUATE PROVISIONS FOR PREVENTING NOISE AND VIBRATION. DRAWINGS INDICATE LOCATIONS OF FIXTURES, APPARATUS, DUCTWORK AND PIPING; WHILE THESE ARE TO BE FOLLOWED AS CLOSELY AS POSSIBLE, IF IT IS NECESSARY TO CHANGE THE LOCATION OF SAME TO ACCOMMODATE BUILDING CONDITIONS, MAKE CHANGES WITHOUT ADDITIONAL COST TO THE OWNER AND AS APPROVED BY THE ENGINEER. PROVIDE ADEQUATE ACCESS TO EQUIPMENT AND APPARATUS REQUIRING OPERATION, SERVICE, OR MAINTENANCE WITHIN THE LIFE OF THE SYSTEM. DO NOT RUN PIPING OR DUCTWORK, OR LOCATE EQUIPMENT (WITH RESPECT TO SWITCHBOARDS, PANEL BOARDS, POWER PANELS, MOTOR CONTROL CENTERS, OR DRY TYPE TRANSFORMERS) WITHIN 42 INCHES IN FRONT OF EQUIPMENT, OVER EQUIPMENT, OR WITHIN 36 INCHES HORIZONTALLY OF SAME SPACE.

THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS, INSPECTIONS AND PAY ALL REQUIRED FEES.

EXISTING CONDITIONS

CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE JOB CONDITIONS BEFORE SUBMITTING A BID. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS AND SIZES OF ALL EXISTING UTILITY SERVICES PRIOR TO SUBMITTING A BID. NO CONSIDERATION WILL BE GIVEN TO CLAIMS FOR EXTRA COST ARISING FROM CONTRACTOR'S FAILURE TO BE FULLY COGNIZANT OF JOB OR SITE CONDITIONS EXISTING AT TIME OF ACCEPTANCE OF BID.

COORDINATION

COORDINATE ALL WORK UNDER THIS DIVISION WITH WORK UNDER OTHER DIVISIONS. PROVIDE ADJUSTMENTS AS NECESSARY. EQUIPMENT, APPARATUS, DUCTWORK, PIPING, ETC., INSTALLED WITHOUT REGARD FOR THE SPACE REQUIREMENTS OF OTHER TRADES WILL BE REWORKED AT THE EXPENSE OF THE INSTALLING SUBCONTRACTOR IF IT CREATES AN UNNECESSARY HINDRANCE TO THE INSTALLATION OF ANOTHER TRADE'S WORK.

PROTECTION OF WORK

DURING CONSTRUCTION, PROVIDE PROTECTIVE COVERS, SKIDS, PLUGS, OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION. PROTECT EXPOSED COILS WITH PLYWOOD OR OTHER SUITABLE RIGID COVERS TO AVOID DAMAGE TO FINS.

CONTRACTOR SHALL TAKE PRECAUTIONS AGAINST DAMAGING OR DISRUPTING BUILDING SYSTEMS, WIRING, OR CONTROL TUBING. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S COST.

PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE. ANY DAMAGE SHALL BE REPAIRED USING THE SAME MATERIALS AT THE CONTRACTOR'S COST.

SUBMITTALS

SUBMIT FOR REVIEW ELECTRONIC PDF SHOP DRAWINGS ON ALL EQUIPMENT, DIFFUSERS, AUTOMATIC CONTROL DIAGRAMS, DUCTWORK LAYOUT, PIPING LAYOUT, AND SHEET METAL CONSTRUCTION STANDARDS.

SUBMIT ALL SHOP DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO PURCHASE, FABRICATION, AND INSTALLATION.

FURNISH TO THE OWNER TWO (2) COPIES OF OPERATING INSTRUCTIONS, MANUFACTURER'S PARTS DATA, AND SERVICE INSTRUCTIONS.

TESTING

REFRIGERANT PIPING SHALL BE LEAK TESTED USING NITROGEN AND REFRIGERANT CHARGE WITH ELECTRONIC LEAK DETECTOR. AFTER REPAIRING LEAKS, RETEST AS REQUIRED. AFTER LEAK TEST, DEHYDRATE BY PRODUCING AND HOLDING VACUUM OF 2.5 IN. HG. MAINTAIN VACUUM FOR 24 HOURS WITH MAXIMUM 0.05 IN. PRESSURE RISE. IF LEAKAGE EXCEEDS 0.05 IN., REPEAT ALL OF TEST BEFORE DEHYDRATION. ALL LEAKS SHALL BE REPAIRED BY TIGHTENING, RE-WELDING, OR REPLACING PIPE AND FITTINGS. CAULKING OF JOINTS WILL NOT BE PERMITTED.

ADJUST DAMPERS, REGISTERS, AND DIFFUSERS FOR PROPER AIR DISTRIBUTION.

CHECK SYSTEM UNDER ACTUAL OPERATING CONDITIONS, AND MAKE ADJUSTMENTS FOR A UNIFORM TEMPERATURE THROUGH THE CONDITIONED SPACE.

CLEANING AND ADJUSTING

THE EXTERIOR SURFACES OF ALL MECHANICAL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE CLEANED OF ALL GREASE, OIL, PAINT, AND OTHER CONSTRUCTION DEBRIS. DUCTS, PLENUMS, AND CASINGS SHALL BE CLEANED OF ALL DEBRIS AND BLOWN FREE OF ALL PARTICLES OF RUBBISH AND DUST BEFORE INSTALLING OUTLET FACES. BEARINGS THAT REQUIRE LUBRICATION SHALL BE LUBRICATED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ALL CONTROL EQUIPMENT SHALL BE ADJUSTED TO THE SETTINGS INDICATED OR REQUIRED FOR PERFORMANCE AS SPECIFIED. REMOVE ALL STICKERS, RUST, STAINS, LABELS, AND TEMPORARY COVERS BEFORE FINAL ACCEPTANCE. REMOVE FOREIGN MATTER FROM EQUIPMENT, PIPING AND DUCTWORK SYSTEMS, AND APPURTENANCES. CLEAN AND POLISH IDENTIFICATION PLATES. REMOVE ALL TRASH AND DEBRIS FROM THE JOB SITE ON A DAILY BASIS.

EQUIPMENT, MATERIALS AND BID

BASIS SPECIFIED MANUFACTURER'S NAMES AND MODEL NUMBERS ARE FOR THE PURPOSE OF DESCRIBING TYPE, CAPACITY, FUNCTION AND QUALITY OF EQUIPMENT AND MATERIALS TO BE USED. UNLESS "OR EQUAL" IS SPECIFICALLY STATED, BIDS SHALL BE BASED ON EQUIPMENT NAMED. CAPACITIES INDICATED TAKE PRECEDENCE OVER MODEL NUMBERS.

BALANCING

PROVIDE A "N.E.B.B." OR "A.A.B.C." CERTIFIED TEST AND BALANCE CONTRACTOR TO PROVIDE A COMPLETE T&B REPORT FOR ALL NEW AND EXISTING HVAC AIR DISTRIBUTION SYSTEMS AND EQUIPMENT AS INDICATED ON PLANS. THE T&B CONTRACTOR SHALL CONFIRM PROPER OPERATION OF ALL NEW AND EXISTING UNITS AND ASSOCIATED CONTROL SYSTEM.

GUARANTEE

MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AGAINST DEFECTS FOR ONE YEAR. PROVIDE ADDITIONAL FOUR YEAR WARRANTY ON ALL COMPRESSORS.

ELECTRICAL WORK

ALL ELECTRICAL EQUIPMENT AND INSTALLATION PROVIDED UNDER THIS DIVISION SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND THE REQUIREMENTS OF DIVISION 26. ALL POWER WIRING AND FINAL POWER CONNECTIONS TO THE SYSTEM SHALL BE PROVIDED UNDER DIVISION 26. CONTROL WIRING (120V AND LESS) SHALL BE PROVIDED UNDER DIVISION 23 AND EXTENDED FROM 120V POWER CIRCUITS. COORDINATE LOCATION AND REQUIREMENTS WITH DIVISION 26, ELECTRICAL CONTRACTOR. ALL WIRING FOR VOLTAGES HIGHER THAN 30 VOLTS SHALL BE DONE BY A LICENSED ELECTRICIAN. ALL ELECTRICAL CHARACTERISTICS SHALL BE TAKEN FROM THE ELECTRICAL DRAWINGS AND SPECIFICATIONS AND COORDINATED BEFORE EQUIPMENT IS ORDERED OR SUBMITTED. ALL WIRING SHALL BE PLENUM-RATED CABLE OR IN CONDUIT.

SLEEVES

SLEEVES SHALL BE PROVIDED WHERE PIPING AND DUCTWORK PASS THROUGH WALLS, FLOORS, AND ROOFS; IRON PIPE PASSING THROUGH MASONRY WALLS MAY BE BUILT INTO THE WALLS. SLEEVES SHALL BE STANDARD WEIGHT STEEL PIPE, EXCEPT SLEEVES FOR CONCEALED PIPING THROUGH FLOORS NOT IN STRUCTURAL MEMBERS. THEY MAY BE 25-GAUGE GALVANIZED SHEET METAL. FLOOR SLEEVES FOR PIPING SHALL EXTEND FORM THE BOTTOM OF THE SLAB TO 2 INCHES ABOVE THE FINISHED FLOOR. WALL SLEEVES SHALL BE FULL THICKNESS OF WALLS. SEAL BETWEEN PIPING AND SLEEVE WITH FIRE-RATED CAULK AT ALL PENETRATIONS OF FIRE-RATED WALLS, PARTITIONS OR FLOORS. MAKE SLEEVES THROUGH OUTSIDE WALLS WATERTIGHT. CAULK BETWEEN UN-INSULATED PIPE AND SLEEVE. SIZE SLEEVES FOR INSULATED PIPES TO ALLOW FULL THICKNESS INSULATION.

OPENINGS THROUGH ROOF AND EXTERIOR WALLS

PROVIDE ALL NECESSARY FLASHING AND COUNTER-FLASHING TO MAINTAIN THE WATERPROOF INTEGRITY OF THIS BUILDING .

MAINTENANCE AND SERVICE

THE CONTRACTOR SHALL INCLUDE AND ASSUME COMPLETE RESPONSIBILITY FOR START-UP, 24-HOURS-A-DAY SERVICE WITH A RESPONSE TIME NOT TO EXCEED FOUR (4) HOURS, AND MAINTENANCE ON A QUARTERLY BASIS (FOUR MAINTENANCE INSPECTIONS A YEAR) FOR A PERIOD OF ONE YEAR FOR ALL HVAC EQUIPMENT, INCLUDING PRE-PURCHASED EQUIPMENT, IF SAID PRE-PURCHASED EQUIPMENT WERE PURCHASED BY THIS CONTRACTOR, AND INCLUDING EXISTING EQUIPMENT WITHIN INDICATED SPACE. SUBSEQUENT THE FIRST YEAR OF MAINTENANCE, THE CONTRACTOR SHALL FORWARD A QUOTE PER THIS SPECIFICATION FOR THE SECOND YEAR OF MAINTENANCE ON THE ABOVE EQUIPMENT.

SHEET METAL WORK

GENERAL

EXCEPT AS OTHERWISE NOTED, ALL SHEET METAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH LATEST EDITION OF THE SHEET METAL AND AIR CONDITIONING CONTRACTOR NATIONAL ASSOCIATION, INC. (SMACNA), HVAC DUCT CONSTRUCTION STANDARDS MANUAL. DUCTWORK SHALL BE GALVANIZED SHEET STEEL, UNLESS OTHERWISE NOTED.

MINIMUM DUCTWORK STATIC PRESSURE CONSTRUCTION SHALL BE 2" W.G. UNLESS NOTED OTHERWISE. ALL DUCTS SHALL BE SEAL CLASS "A".

FLEXIBLE CONNECTIONS: NEOPRENE-COATED GLASS FABRIC, 30 OZ. PER SQUARE YARD WITH SEWED AND CEMENTED SEAMS, SIMILAR TO VENT FABRICS. PROVIDE FLEXIBLE CONNECTIONS BETWEEN ALL EQUIPMENT AND RIGID DUCTWORK. FABRIC CONNECTIONS SHALL BE AT LEAST FOUR (4) INCHES LONG AND HAVE METAL COLLAR AT EACH END; ALLOW AT LEAST ONE INCH SLACK TO ELIMINATE VIBRATION TRANSMISSION.

DUCT SIZES SHOWN ARE CLEAR INSIDE DIMENSIONS.

FIELD QUALITY CONTROL

INSPECT ALL JOINTS AND SEAMS TO DETERMINE PROPER APPLICATION OF CLOSURE MATERIALS.

CLEANING

REMOVE DUST AND DEBRIS FROM INSIDE DUCTS AND FITTINGS. CLEAN FINISHES TO REMOVE DUST AND DIRT.

MECHANICAL INSULATION

QUALITY ASSURANCE: SPECIFIED COMPONENTS OF THIS INSULATION SYSTEM, INCLUDING FACINGS, MASTICS, AND ADHESIVES, SHALL HAVE A FIRE HAZARD RATING NOT TO EXCEED 25 FOR FLAME SPREAD AND 50 FOR SMOKE DEVELOPED RATING, AS PER TESTS CONDUCTED IN ACCORDANCE WITH ASTM E84 (NFPA 255) METHODS.

PIPE INSULATION:

TYPE P1 ASTM C534 (-40 ° F TO 220 ° F):
FLEXIBLE, CLOSED CELL ELASTOMERIC, NOMINAL 6 P.C.F. DENSITY, K FACTOR 0.27 MAXIMUM AT 75°F MEAN.

APPROVED PRODUCTS:
ARMSTRONG AP ARMAFLEX
MANVILLE AEROTUBE II
NOMACO THERMA-CEL
RUBATEX R-180-F5

DUCT INSULATION:

TYPE D1 ASTM C553 TYPE 1, CLASS B3:
FIBERGLASS, NOMINAL 1 (ONE) P.C.F. DENSITY BLANKET, K FACTOR 0.31 MAXIMUM AT 75°F MEAN, WITH FACTORY-APPLIED FSK (FOIL-SCRIM-KRAFT) VAPOR BARRIER JACKET, FOR TEMPERATURES TO 250°F.

APPROVED PRODUCTS:
CERTAINTEED "STANDARD DUCT WRAP"
MANVILLE "MICROLITE"
OWENS/CORNING FIBERGLASS RFK-75
KNAUF "DUCTWRAP"

INSTALLATION OF PIPE INSULATION:

INSTALL INSULATION ON PIPE SYSTEMS SUBSEQUENT TO TESTING AND ACCEPTANCE OF TEST.

MAINTAIN INTEGRITY OF VAPOR-BARRIER JACKETS ON PIPE INSULATION, AND PROTECT TO PREVENT PUNCTURE OR OTHER DAMAGE. SEAL OPEN ENDS OF INSULATION.

COVER VALVES, FLANGES, FITTINGS, AND SIMILAR ITEMS IN EACH PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN. INSTALL FACTORY-MOLDED, PRECUT OR JOB-FABRICATED UNITS (AT INSTALLER'S OPTION). EXTEND PIPING INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS, AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.

ALL EXTERIOR PIPE INSULATION SHALL BE PAINTED OR OTHERWISE COVERED WITH PVC OR ALUMINUM JACKET.

INSTALLATION OF DUCTWORK INSULATION:

MAINTAIN INTEGRITY OF VAPOR-BARRIER ON DUCTWORK INSULATION, AND PROTECT IT TO PREVENT PUNCTURE AND OTHER DAMAGE. TAPE ALL PUNCTURES. SECURE ALL DUCTWORK WITH GALVANIZED WIRE 12 INCHES O.C. SECURE DUCTWORK WITH OUTWARD CLINCHING STAPLES. SEAL ALL LONGITUDINAL AND CIRCUMFERENTIAL JOINTS WITH FAB AND MASTIC.

INSULATION REQUIREMENTS:

REFRIGERANT PIPING: (SUCTION, HOT GAS BYPASS AND HOT GAS REHEAT)
TYPE P1 CLOSED-CELL ELASTOMERIC: 3/4" THICKNESS

CONDENSATE DRAIN PIPING:
TYPE P1 CLOSED-CELL ELASTOMERIC: 1/2" THICKNESS

DUCTWORK, SUPPLY AND RETURN AIR:
TYPE D1: 2" THICKNESS

AUTOMATIC CONTROLS

THE INTENT OF THIS SECTION IS TO OBTAIN A COMPLETE AND FUNCTIONAL AUTOMATIC TEMPERATURE CONTROL SYSTEM FOR ALL MECHANICAL EQUIPMENT, SYSTEMS, AND DEVICES OF THE PROJECT. THIS CONTRACTOR IS TO FURNISH AND INSTALL, AS REQUIRED, ELECTRIC/ELECTRONIC CONTROLS, ALL NECESSARY COMPONENTS, CONTROL WIRING, INTERLOCK WIRING, CONTACTORS, RELAYS, CONTROL TRANSFORMERS, ALARMS, CONTROL DAMPERS, CONTROL VALVES, ETC., TO ACHIEVE THE DESIRED CONTROL OPERATION FOR THE AIR CONDITIONING SYSTEMS.

CONTROL WIRING SHALL BE #12 CU. AND INSTALLED IN EMT CONDUIT (MINIMUM 1/2" DIAMETER) OR PLENUM-RATED CABLE WHERE APPLICABLE.

MOUNT CONTROLLERS WHERE INDICATED ON PLANS AT 48" A.F.F. PER ADA, UNLESS NOTED OTHERWISE.

PIPING

GENERAL

PIPING SHALL BE COMPLETE WITH PIPE FITTINGS, VALVES, COUPLING, STRAINERS, HANGER RODS, HANGERS, SUPPORTS, GUIDES, SLEEVES, AND ACCESSORIES IN CONFORMANCE WITH THE LATEST CODES AND ASME, ANSI, ASTM, AND MSS STANDARDS.

NO PIPING SHALL BE LESS THAN 3/4" UNLESS OTHERWISE NOTED. FOR PIPE SIZES NOT INDICATED ON PLANS, SEE MANUFACTURER'S EQUIPMENT CONNECTION DETAILS.

PROVIDE FITTINGS FOR CHANGE IN PIPE SIZE AND FOR FINAL CONNECTION AT EQUIPMENT, AS REQUIRED.

AVOID ENTRY OF FOREIGN MATTER INTO PIPING DURING CONSTRUCTION.

PIPING MATERIAL

REFRIGERANT PIPING SHALL BE COPPER ASTM #B280, FACTORY CLEANED, NITROGEN CHARGED AND CAPPED.

CONDENSATE DISCHARGE PIPING SHALL BE COPPER TYPE "L" PIPE OR PVC.

PIPING AND FITTINGS SHALL BE SUITABLE FOR OPERATING PRESSURES OF 150 PSI.

FITTINGS

PROVIDE DIELECTRIC GASKETS FOR JOINTS OF DISSIMILAR METALS: ISOLATING GASKETS, SLEEVES, AND WASHERS BETWEEN FLANGES, BOLTS, AND NUTS.

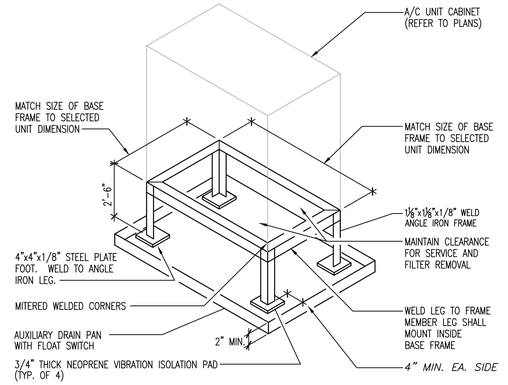
TRAP SEAL IN CONDENSATE DRAIN PIPING SHALL BE MINIMUM ONE INCH GREATER THAN THE STATIC PRESSURE IN SYSTEM.

REFRIGERANT PIPE SIZE

LIQUID AND SUCTION REFRIGERANT LINES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. HOWEVER, LIQUID LINE VELOCITY SHALL NOT EXCEED 360 FPM, AND THE PRESSURE DROP SHALL BE LIMITED TO AN EQUIVALENT OF 2°F OF TEMPERATURE CHANGE. THE SUCTION LINE VELOCITY SHALL BE A MINIMUM OF 500 FPM IN HORIZONTAL LINES, AND A MINIMUM OF 1000 FPM IN VERTICAL RISERS (IF PART LOAD CONDITIONS EXIST, A DOUBLE RISER MAY BE REQUIRED); THE PRESSURE DROP SHALL BE LIMITED TO 2°F OF TEMPERATURE CHANGE.

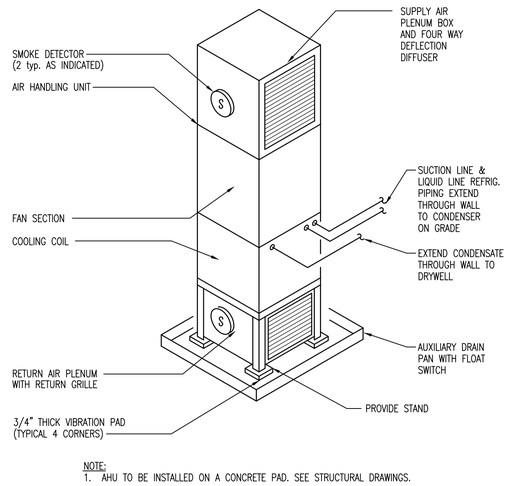
AIR DISTRIBUTION DEVICES

DIFFUSERS, REGISTERS, AND GRILLES SHALL BE AS SCHEDULED ON THE DRAWINGS, OR APPROVED EQUAL. ALL DIFFUSERS AND REGISTERS SHALL BE FURNISHED WITH OPPOSED-BLADE DAMPERS.



AIR HANDLING UNIT SUPPORT DETAIL

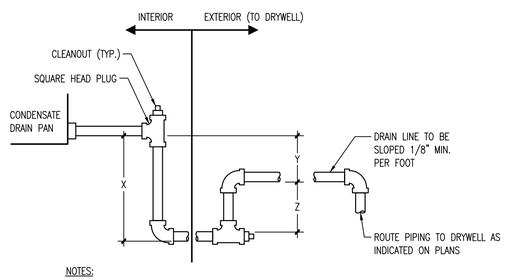
NO SCALE



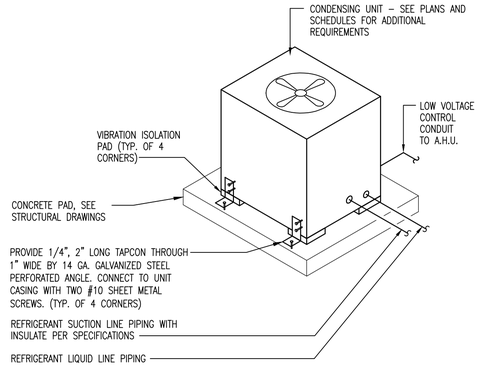
NOTE:
1. AHU TO BE INSTALLED ON A CONCRETE PAD. SEE STRUCTURAL DRAWINGS.

ELECT. RM. VERTICAL AHU DETAIL

NO SCALE



NOTES:
1. X = Y + Z + PIPE DIAMETER, WHERE:
   Y = ONE INCH FOR EACH INCH OF NEGATIVE PRESSURE PLUS ONE INCH
   Z = 1/2 OF X
   NEGATIVE PRESSURE = TOTAL UNIT STATIC PRESSURE AT WORST CASE (LOADED FILTERS) MINUS EXTERNAL STATIC PRESSURE
2. FILL TRAP MANUALLY ON INITIAL START-UP.
3. TRAP EACH COMPONENT DRAIN CONNECTION.
4. PIPE SIZE SHALL NOT BE LESS THAN DRAIN PAN CONNECTION SIZE.
5. INSULATE CONDENSATE PIPING INSIDE CONDITIONED SPACE PER SPECIFICATIONS.



NOTE:
1. PROVIDE CODE REQUIRED AMD MFR'S RECOMMENDED CLEARANCE AROUND UNIT FOR SERVICE AND PROPER OPERATION.

CONDENSING UNIT SUPPORT DETAIL

NO SCALE

CONDENSATE DRAIN TRAP PIPING DETAIL

SCALE: NONE

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BID SET

NO.	DATE	ISSUED FOR	APRV'D BY

DESIGNED: MLB
DRAWN: MLB
CHECKED: MLB
APPROVED: MLB

MICHELLE L. BROOKS, P.E.
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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: HVAC H-2

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

HVAC SPECIFICATIONS AND DETAILS

DATE: APRIL 2020
SHEET: 27 of 41
DRAWING: H-2

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Layout Tab: H-2
Acad Version : R23.0s (LMS Tech)
User Name : rmeeks

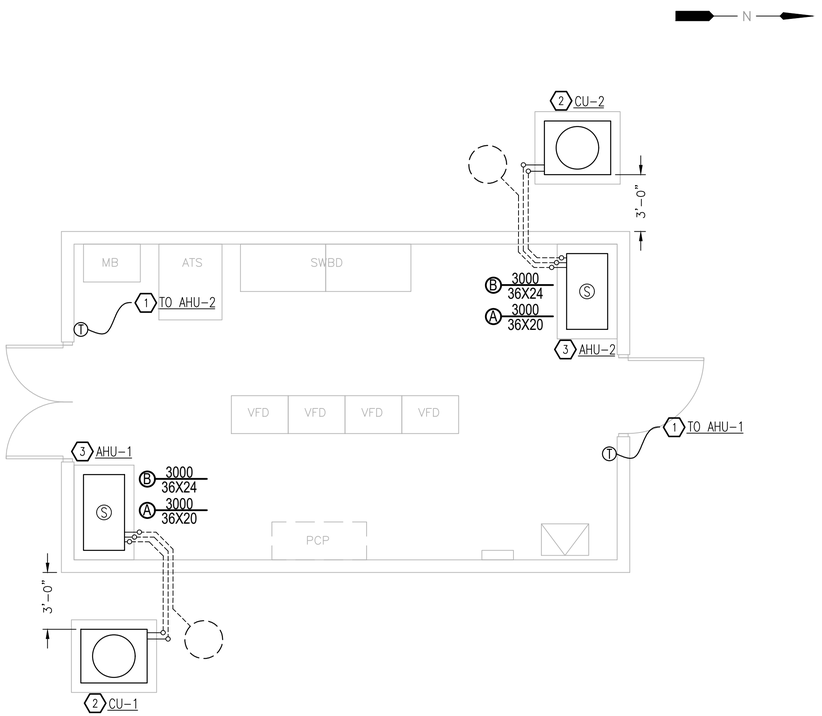
H.V.A.C. HEX NOTES

MECHANICAL GENERAL NOTES:

1. REFER TO SPECIFICATIONS AND DETAILS FOR ADDITIONAL REQUIREMENTS.

MECHANICAL RENOVATION HEX NOTES:

1. COORDINATE EXACT LOCATION OF THERMOSTATS WITH OWNER TO AVOID CONFLICTS WITH EQUIPMENT. SET ONE THERMOSTAT TO 80° F AND THE OTHER TO 85° F.
2. PROVIDE NEW CONDENSING UNIT IN APPROXIMATE LOCATION SHOWN. COORDINATE EXACT LOCATION SO AS TO AVOID OTHER EQUIPMENT, SIDEWALKS & DOORS; TO PROVIDE MANUFACTURER'S REQUIRED CLEARANCES; AND COMPLY WITH SPECS AND DETAILS. DO NOT LOCATE CONDENSER DIRECTLY UNDER DRIP EDGE OF ROOF.
3. PROVIDE NEW VERTICAL AIR HANDLER AND APPURTENANCES APPROXIMATELY AS SHOWN. PROVIDE EXTERNALLY INSULATED SHEET METAL SUPPLY AND RETURN AIR PLENUMS WITH AIR DISTRIBUTION AS SPECIFIED. INSTALL REFRIGERANT AND CONDENSATE LINES IN UNDERGROUND CHASE; DROP CONDENSATE IN DRYWELL.



ELECTRICAL BUILDING HVAC PLAN

SCALE: 1/4"=1'-0"

1 0 1 2 3 7'

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BID SET

NO.	DATE	ISSUED FOR	APRV'D BY

DESIGNED: MLB
DRAWN: MLB
CHECKED: MLB
APPROVED: MLB

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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: HVAC H-3

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING
HVAC PLAN

DATE: APRIL 2020
SHEET: 28 of 41
DRAWING: H-3

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GENERAL SYMBOLS

AS	THREE PHASE AMP SWITCH
AT	ALARM TIMER
CR	CONTROL RELAY
ETM	ELAPSED TIME METER
F 30/20	FUSED DISCONNECT SWITCH (30/20: 30=SWITCH RATING, 20=FUSE RATING)
FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
FS	FLOW SWITCH
GFR	GROUND FAULT RELAY
J	JUNCTION BOX N.E.C. SURFACE MTD UNLESS INDICATED OTHERWISE.
J	JUNCTION BOX PER N.E.C., FLUSH MTD UNLESS INDICATED OTHERWISE.
K	KIRK KEY INTERLOCK
LIT	LEVEL INDICATING TRANSMITTER
LLS	LIQUID LEVEL SWITCH
LS	LIMIT SWITCH
LSH	HIGH LEVEL FLOAT SWITCH
M	MOTOR STARTER
SH	SPACE HEATER
TC	TERMINATION CABINET
TR	TIMING RELAY
TS	TEMPERATURE SWITCH
V	VOLTMETER
10	ELECTRIC A.C. MOTOR, NO. INDICATES HORSEPOWER.
1	ELECTRIC D.C. MOTOR, NO. INDICATES HORSEPOWER.
	COMBINATION MOTOR STARTER
	ELECTRIC HEATER
	CROUSE HINDS EYSR FITTING AND CORRESPONDING "CHICO" CEMENT. COMBINATION SHALL BE RATED TO SEPARATE A CLASS 1, DIVISION 2 INSTALLATION.
	FLUSH OR SURFACE MOUNTED LIGHTING PANELBOARD.
	FLUSH OR SURFACE MOUNTED POWER PANELBOARD.
30	DRY TYPE TRANSFORMER. NO. INDICATES KVA RATING.
	FUSE
	POLE MOUNTED PARKING LOT LIGHTING FIXTURE
	EXISTING POLE MOUNTED PARKING LOT LIGHTING FIXTURE
EXISTING	SLANTED, SHADED, SOLID LINES & TEXT DENOTE EXISTING EQUIPMENT, STRUCTURES AND WORK.
FUTURE	SLANTED, NON–SHADED, DASHED LINES & TEXT DENOTE FUTURE EQUIPMENT, STRUCTURES AND WORK.
PROPOSED	NON–SLANTED, NON–SHADED, SOLID LINES & TEXT DENOTE PROPOSED EQUIPMENT, STRUCTURES AND WORK.

PLAN SYMBOLS

	HOME RUN TO PANELBOARD. NO. OF ARROWS INDICATE NO. OF CIRCUITS, HASH MARKS INDICATE NO. OF #12 AWG. CONDUCTORS. NO HASH MARKS INDICATE 2 #12 CONDUCTORS.
	CONDUIT CONCEALED IN WALL, IN SLAB ABOVE, OR ABOVE CEILING
	CONDUIT CONCEALED IN OR BELOW FLOOR OR UNDERGROUND.
	CONDUIT RUN EXPOSED. RUN PARALLEL OR PERPENDICULAR TO STRUCTURE OR WALL.
	FLEXIBLE CONDUIT WITH EQUIPMENT CONNECTION.
	CONCRETE ENCASED DUCTBANK.
	90A, 208V, 1ø WELDING OUTLET
	20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 18" ABOVE FINISHED FLOOR.
	20A, 125V, 3W DUPLEX RECEPTACLE IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR OR 2" ABOVE COUNTER AS REQUIRED.
	20A, 125V, 3W DUPLEX RECEPTACLE, SURFACE MOUNTED.
WP	20A, 125V, 3W DUPLEX RECEPTACLE IN NEMA 4 SERVICE OUTLET BOX. RECEPTACLES SHALL BE GFI TYPE, EXCEPT FOR RECEPTACLES DEDICATED TO HEAT TRACING, WHICH SHALL BE POWERED FROM A GFI BREAKER.
	30A, 250V 10, 3W SINGLE RECEPTACLE IN FLUSH OUTLET BOX, 18" ABOVE FINISHED FLOOR.
S	SINGLE POLE SWITCH IN FLUSH OUTLET BOX, 48" ABOVE FINISHED FLOOR, UNLESS OTHERWISE NOTED (TYPICAL).
S WP	SINGLE POLE SWITCH, SURFACE–MOUNTED NEMA 4X BOX.
S	SINGLE POLE SWITCH, SURFACE MOUNTED.
S MC	MOMENTARY CONTACT SWITCH IN FLUSH OUTLET BOX.
S3	THREE–WAY SWITCH IN FLUSH OUTLET BOX.
S4	FOUR–WAY SWITCH IN FLUSH OUTLET BOX.
	FLUSH OUTLET BOX AND TELEPHONE COVER PLATE 48" ABOVE FINISHED FLOOR.
	NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.
	NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS
SM	MOTOR DUTY, SINGLE PHASE DISCONNECT, NEMA 4X STAINLESS STEEL
C	CONTROL PULLBOX
P	POWER MANHOLE

SINGLE LINE DIAGRAM SYMBOLS

	MOLDED CASE CIRCUIT BREAKER
	TYPICAL SELECTOR SWITCH AND CONTROL. SEE ELEMENTARY DIAGRAMS FOR EXACT TYPE.
	SERVICE OR EQUIPMENT GROUND.
	NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED.
	NON–FUSIBLE DISCONNECT SWITCH, 30A,3P UNLESS OTHERWISE INDICATED, WITH REMOTE CONTROL STATION AS REQUIRED BY ELEMENTARY DIAGRAMS OR SPECS
	CURRENT TRANSFORMERS
	POTENTIAL TRANSFORMERS

ABBREVIATIONS

A	AMPERES
ACCU	AIR COOLED CONDENSING UNIT
AE	ANALYZER ELEMENT
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CURRENT
AIT	ANALYZER INDICATING TRANSMITTER
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BKR	BREAKER
BLDG	BUILDING
CAB	CABINET
CB	CIRCUIT BREAKER
CU	COPPER
DH	DATA HIGHWAY
DISC	DISCONNECT
DO	DIGITAL OUTPUT
DWG	DRAWING
EA	EACH
EFF	EFFLUENT
ELEC	ELECTRICAL
EM	EMERGENCY
ENCL	ENCLOSURE
ESB	ENERGY SAVING BALLAST
ETM	ELAPSED TIME METER
EUH	ELECTRIC UNIT HEATER
EVA	ELECTRIC VALVE ACTUATOR
EXH	EXHAUST
EXST	EXISTING
F&I	FURNISH AND INSTALL
FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
FSL	FLOW SWITCH LOW
FVC	FULL VOLTAGE CONTACTOR
FPL	FLORIDA POWER AND LIGHT
FVNR	FULL VOLTAGE NON–REVERSING
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
HOA	HAND–OFF–AUTOMATIC
HOLR	HAND–OFF–LOCAL–REMOTE
HOR	HAND–OFF–REMOTE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HWY	HIGHWAY
INSTR	INSTRUMENTATION
KVA	KILOVOLT–AMPERES
KW	KILOWATT
LA	LIGHTNING ARRESTOR
LTG	LIGHTING
MB	MAIN BREAKER
MAX	MAXIMUM
MFR	MANUFACTURER
MH	METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MR	MOTOR RUNNING
MSC	MANUFACTURER SUPPLIED CABLE
MTD	MOUNTED
NEC	NATIONAL ELECTRIC CODE
NEUT	NEUTRAL
NO.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OH	OVERHEAD
P	POLE
PB	PULL BOX
PC	PHOTO CELL
PIT	PRESSURE INDICATING TRANSMITTER
PM	PHASE MONITOR
PNL	PANEL
PVC	POLYVINYL CHLORIDE
RECPT	RECEPTACLE
SH	SHIELDED
SLD	SINGLE LINE DIAGRAM
SPD	SURGE PROTECTION DEVICE
SS	STAINLESS STEEL
SW	SWITCH
TC	TERMINATION CABINET
TR	TRANSFORMER
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLT
W	WATT
W/	WITH
WP	WEATHERPROOF
ø	PHASE

GENERAL NOTES

1. ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL NEW ELECTRICAL WORK INDICATED.
2. ELECTRICAL CONTRACTOR SHALL VISIT JOB SITE AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING ELECTRICAL AND COMMUNICATIONS INSTALLATION AND MAKE PROVISIONS AS TO THE COST THEREOF. EXISTING CONDITIONS OF ELECTRICAL, TELEPHONE, LIGHTING FIXTURES, ETC... THAT ARE PART OF THE FINAL SYSTEM SHALL BE VERIFIED BY THE CONTRACTOR.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2017 FLORIDA BUILDING CODE, THE 2014 NATIONAL ELECTRICAL CODE AND SHALL COMPLY WITH ALL LOCAL RULES AND ORDINANCES.
4. THE PLANS REFLECT SYSTEM VOLTAGE DROPS AS PER F.B.C. ENERGY CONSERVATION 2017, SIXTH C405.6.3 FEEDER CONDUCTORS ARE SIZED FOR A MAXIMUM VOLTAGE DROP OF 2 PERCENT AT DESIGN LOAD. BRANCH CIRCUIT CONDUCTORS ARE SIZED FOR A MAXIMUM VOLTAGE DROP OF 3 PERCENT AT DESIGN LOAD.
5. MINIMUM WIRE SIZE SHALL BE #12 A.W.G. EXCLUDING CONTROL WIRING. UNLESS OTHERWISE NOTED, ALL CONDUCTORS SHALL BE COPPER WITH THHN/THWN INSULATION. ALL CONDUIT SHALL BE PVC SCHEDULE 80.
6. CONTRACTOR SHALL VERIFY TYPE AND LOCATION OF EXISTING UNDERGROUND UTILITIES, INCLUDING IRRIGATION, GAS, TELEPHONE, DOMESTIC WATER & SEWER, ELECTRIC, ETC., PRIOR TO BEGINNING WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THESE UTILITIES. UTILITY DAMAGE BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.
7. EXTERIOR PULL BOXES SHALL HAVE A GROUND ROD AND GROUNDING CONNECTIONS WITH EXOTHERMIC WELDS. MINIMUM SIZE ELECTRODES SHALL BE 5/8" X 10 FOOT LONG, MINIMUM SIZE BONDING CONDUCTOR SHALL BE #6AWG GREEN JACKETED COPPER WIRE."
8. IT IS NOT THE INTENT OF THESE PLANS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR IS EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR THE EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
9. ELECTRICAL SYSTEM SHALL BE COMPLETE AND EFFECTIVELY GROUNDED AS REQUIRED BY THE LATEST EDITION OF THE N.E.C. OR LOCAL CODES.
10. ALL MATERIALS SHALL BE NEW AND BEAR UNDERWRITERS' LABELS WHERE APPLICABLE.
11. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEM SHALL BE FULLY OPERATIVE AND ACCEPTED BY ENGINEER/ARCHITECT.
12. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE OR AS REQUIRED BY THE TOWN OF JUPITER AND THE DCCP. THE MORE STRINGENT SHALL BE ADHERED TO.
13. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THERE BY.
14. ALL REQUIRED INSURANCE SHALL BE PROVIDED FOR PROTECTION AGAINST PUBLIC LIABILITY OF PROPERTY DAMAGED FOR THE DURATION OF THE WORK.
15. CONTRACTOR TO OBTAIN PERMIT AND APPROVED SUBMITTALS PRIOR TO BEGINNING WORK OR ORDERING EQUIPMENT.
16. THE ELECTRICAL INSTALLATION SHALL MEET ALL STANDARD REQUIREMENTS OF POWER COMPANY.
17. ALL ELECTRICAL WORK SHALL CONFORM TO THE NEC AND LOCAL ORDINANCES HAVING JURISDICTION.
18. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OR CUT SHEETS OF LIGHTING FIXTURES, SWITCHES, AND OTHER ELECTRICAL ITEMS FOR APPROVAL BY ENGINEER.
19. ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS W/ TYPE WRITTEN DIRECTORIES.
20. ALL WIRE TO BE IN CONDUIT.
21. ALL UNDERGROUND CONDUIT TO BE INSTALLED AS PER THE NATIONAL ELECTRIC CODE.
22. CONTRACTOR SHALL COORDINATE NEW ELECTRICAL SERVICE WITH FPL.
23. NON–SHADED TEXT DENOTES NEW EQUIPMENT, STRUCTURES & WORK. *SHADED & SLANTED TEXT* DENOTES EXISTING EQUIPMENT, STRUCTURES & WORK.

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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018–05
CAD REF.: E–01 NOTE

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL NOTES, SYMBOLS AND ABBREVIATIONS

DATE: APRIL 2020
SHEET: 29 of 41
DRAWING: E–1

Acad Version : R23.0s (LMS Tech)
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Date\Time : Tue, 21 Apr 2020 - 8:02am
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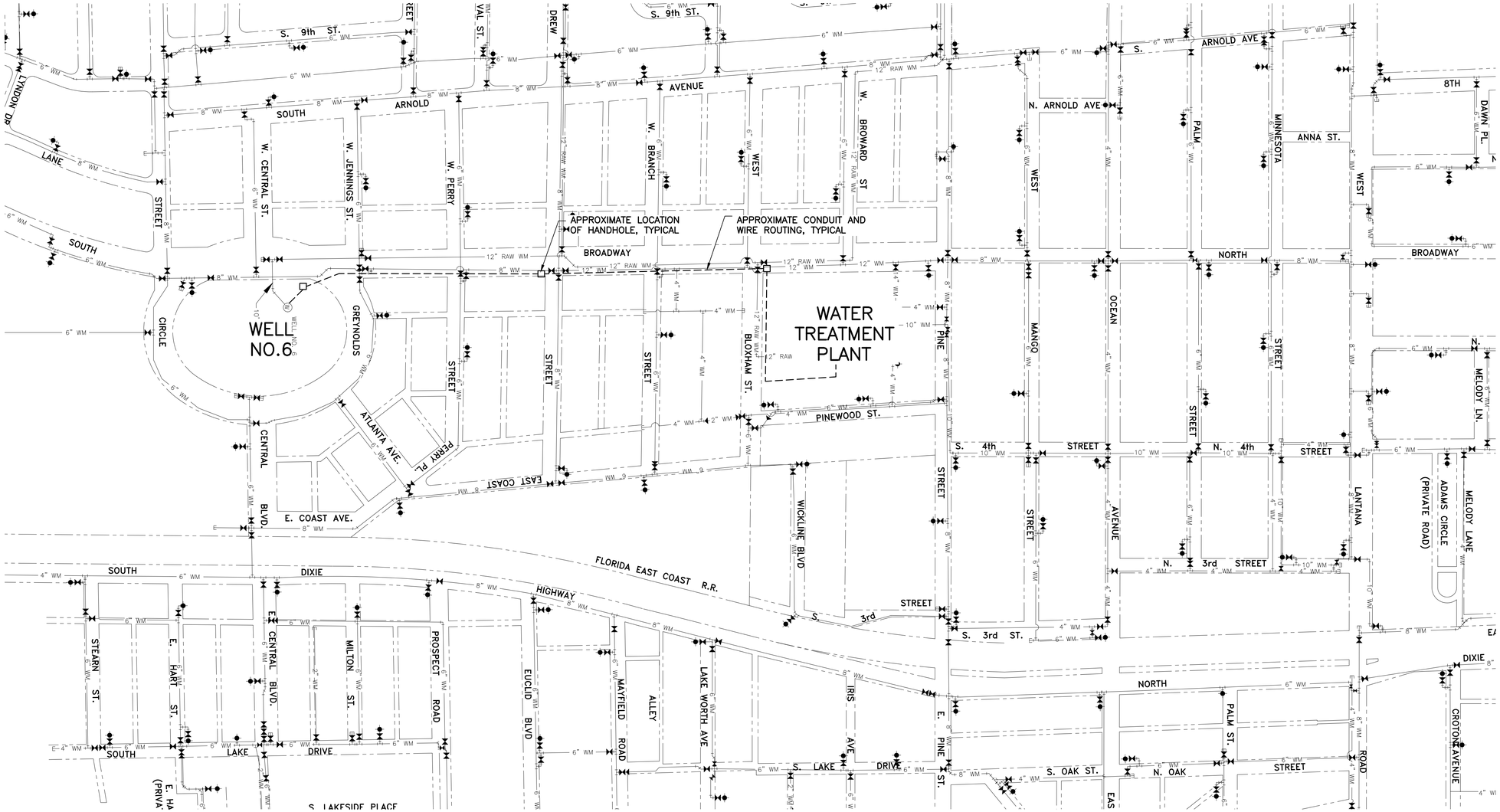

LOCATION MAP

SCALE: 1"=200'-0"

200 100 0 200'

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PROJECT NO.: BW2018-05
CAD REF.: E-02 LOCATION MAP

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

LOCATION MAP

DATE: APRIL 2020
SHEET: 30 of 41
DRAWING: E-2

Acad Version : R23.0s (LMS Tech)
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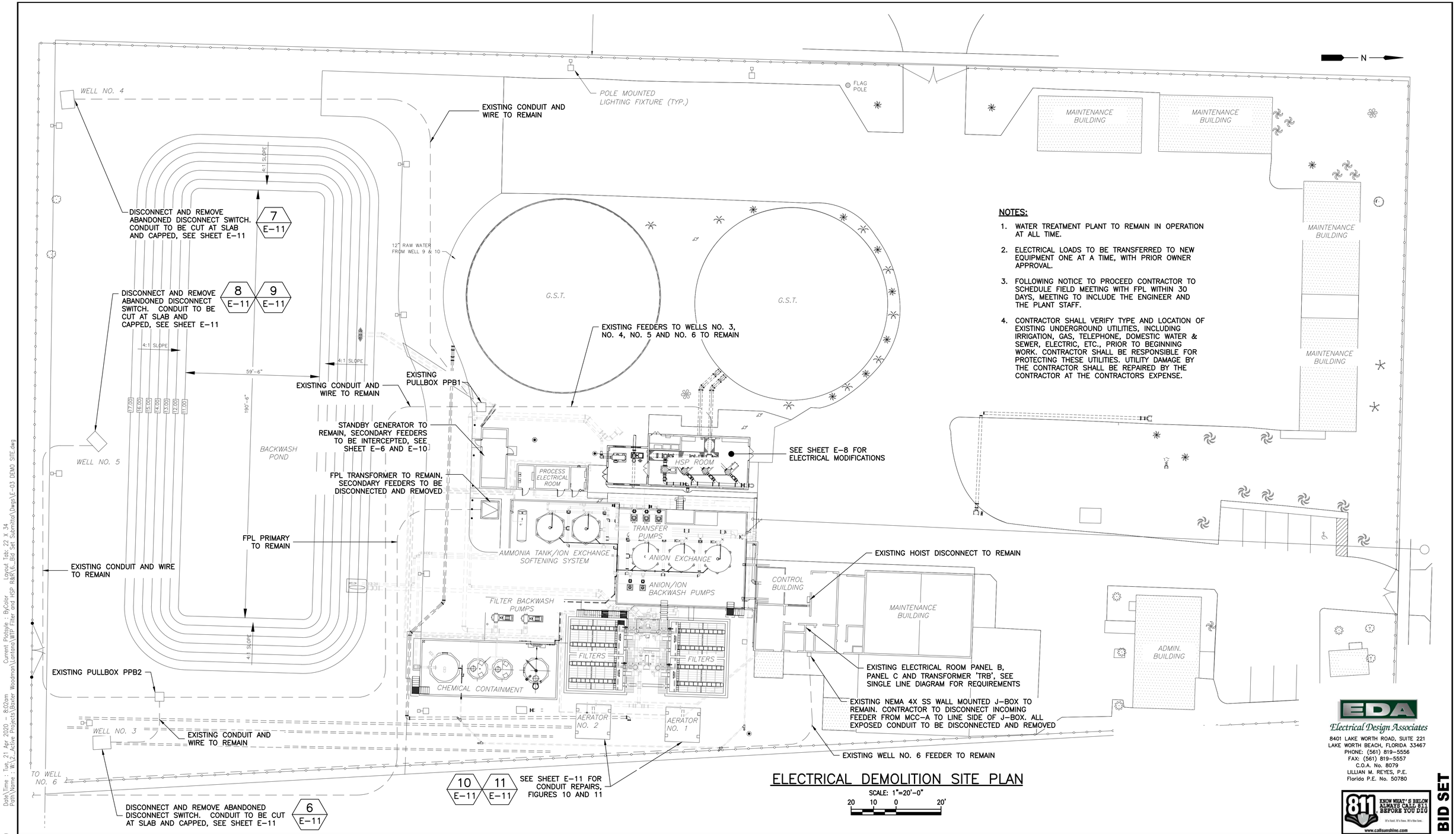

NOTES:

1. WATER TREATMENT PLANT TO REMAIN IN OPERATION AT ALL TIME.
2. ELECTRICAL LOADS TO BE TRANSFERRED TO NEW EQUIPMENT ONE AT A TIME, WITH PRIOR OWNER APPROVAL.
3. FOLLOWING NOTICE TO PROCEED CONTRACTOR TO SCHEDULE FIELD MEETING WITH FPL WITHIN 30 DAYS, MEETING TO INCLUDE THE ENGINEER AND THE PLANT STAFF.
4. CONTRACTOR SHALL VERIFY TYPE AND LOCATION OF EXISTING UNDERGROUND UTILITIES, INCLUDING IRRIGATION, GAS, TELEPHONE, DOMESTIC WATER & SEWER, ELECTRIC, ETC., PRIOR TO BEGINNING WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THESE UTILITIES. UTILITY DAMAGE BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.

ELECTRICAL DEMOLITION SITE PLAN

SCALE: 1"=20'-0"

20 10 0 20'

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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: E-03 DEMO SITE

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL DEMOLITION SITE PLAN

DATE: APRIL 2020
SHEET: 31 of 41
DRAWING: E-3

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Date\Time : Tue, 21 Apr 2020 - 8:02am
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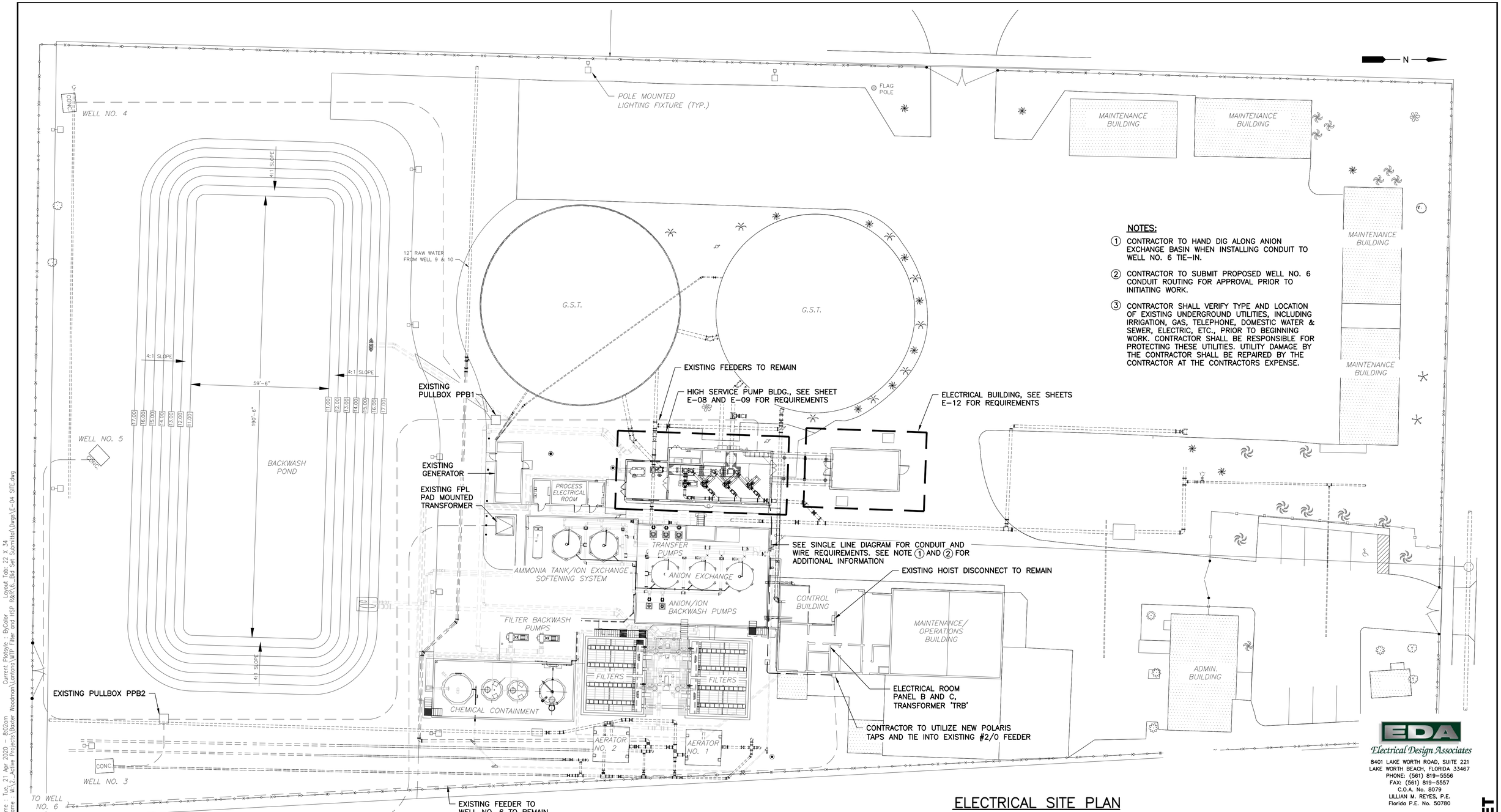

NOTES:

1. CONTRACTOR TO HAND DIG ALONG ANION EXCHANGE BASIN WHEN INSTALLING CONDUIT TO WELL NO. 6 TIE–IN.
2. CONTRACTOR TO SUBMIT PROPOSED WELL NO. 6 CONDUIT ROUTING FOR APPROVAL PRIOR TO INITIATING WORK.
3. CONTRACTOR SHALL VERIFY TYPE AND LOCATION OF EXISTING UNDERGROUND UTILITIES, INCLUDING IRRIGATION, GAS, TELEPHONE, DOMESTIC WATER & SEWER, ELECTRIC, ETC., PRIOR TO BEGINNING WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THESE UTILITIES. UTILITY DAMAGE BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTORS EXPENSE.

ELECTRICAL SITE PLAN

SCALE: 1"=20'–0"

20 10 0 20'

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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018–05
CAD REF.: E–04 SITE

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL SITE PLAN

DATE: APRIL 2020
SHEET: 32 of 41
DRAWING: E–4

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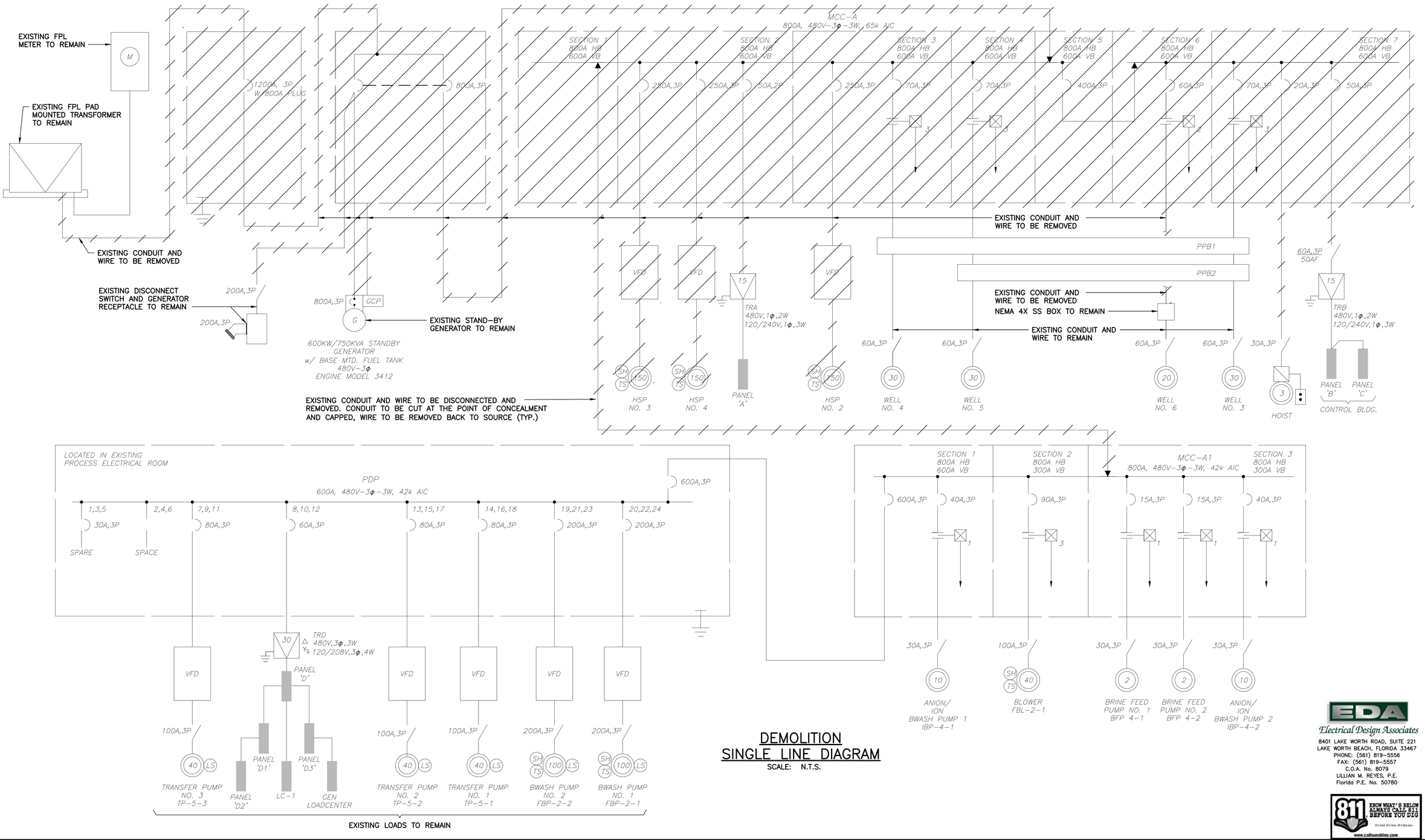

DEMOLITION SINGLE LINE DIAGRAM

SCALE: N.T.S.

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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: E-05 DEMO SLD

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

DEMOLITION SINGLE LINE DIAGRAM

DATE: APRIL 2020
SHEET: 33 of 41
DRAWING: E-5

Acad Version : R23.0s (LMS Tech)
User Name : mreeks
Date\Time : Tue, 21 Apr 2020 - 8:02am
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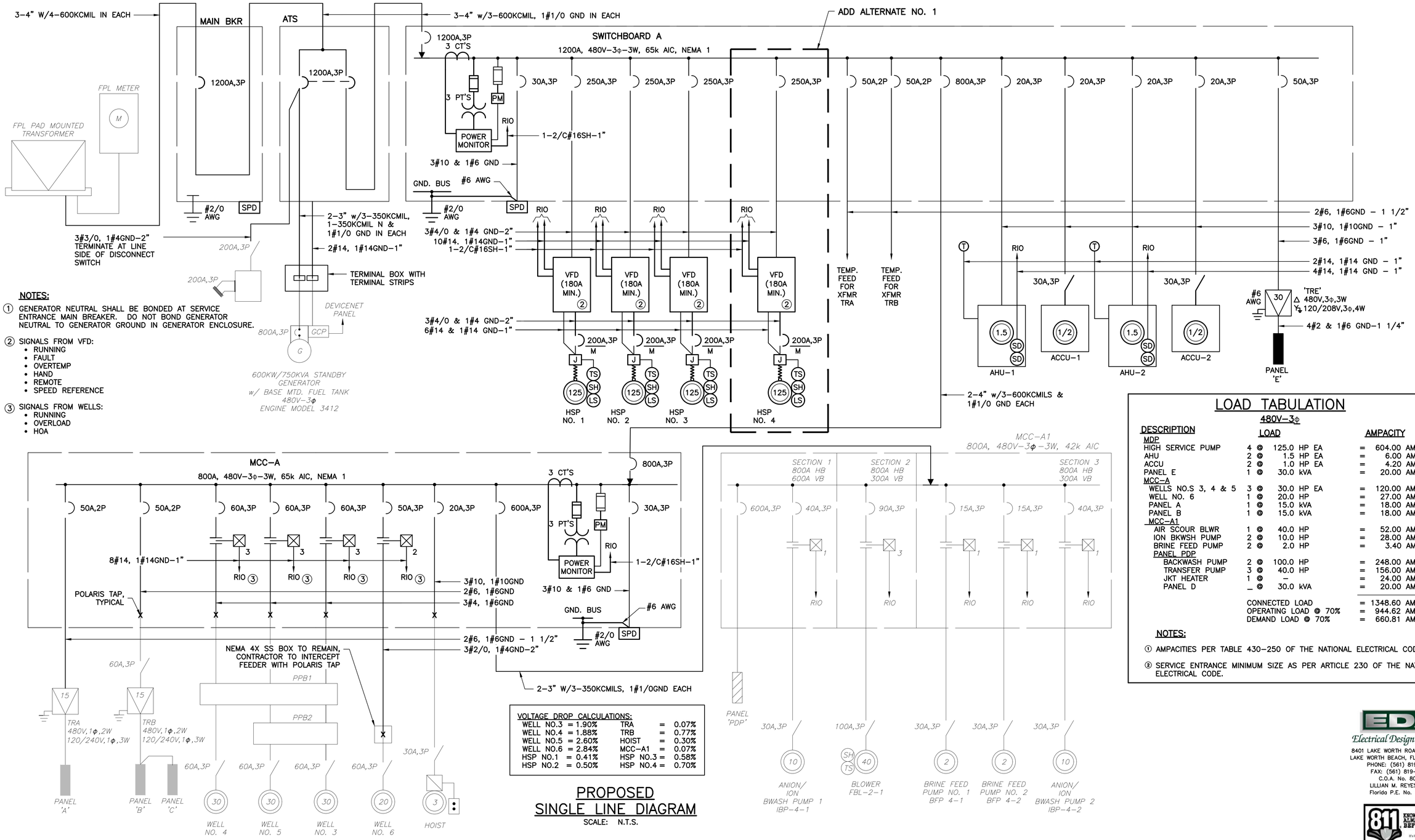

LOAD TABULATION

480V-3Φ

DESCRIPTION	LOAD		AMPACITY
MDP			
HIGH SERVICE PUMP	4 @ 125.0 HP EA	=	604.00 AMPS
AHU	2 @ 1.5 HP EA	=	6.00 AMPS
ACCU	2 @ 1.0 HP EA	=	4.20 AMPS
PANEL E	1 @ 30.0 kVA	=	20.00 AMPS
MCC-A			
WELLS NO.S 3, 4 & 5	3 @ 30.0 HP EA	=	120.00 AMPS
WELL NO. 6	1 @ 20.0 HP	=	27.00 AMPS
PANEL A	1 @ 15.0 kVA	=	18.00 AMPS
PANEL B	1 @ 15.0 kVA	=	18.00 AMPS
MCC-A1			
AIR SCOUR BLWR	1 @ 40.0 HP	=	52.00 AMPS
ION BKWSH PUMP	2 @ 10.0 HP	=	28.00 AMPS
BRINE FEED PUMP	2 @ 2.0 HP	=	3.40 AMPS
PANEL PDP			
BACKWASH PUMP	2 @ 100.0 HP	=	248.00 AMPS
TRANSFER PUMP	3 @ 40.0 HP	=	156.00 AMPS
JKT HEATER	1 @ –	=	24.00 AMPS
PANEL D	_ @ 30.0 kVA	=	20.00 AMPS
CONNECTED LOAD		=	1348.60 AMPS
OPERATING LOAD @ 70%		=	944.62 AMPS
DEMAND LOAD @ 70%		=	660.81 AMPS

NOTES:

① AMPACITIES PER TABLE 430-250 OF THE NATIONAL ELECTRICAL CODE.

② SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

VOLTAGE DROP CALCULATIONS:

WELL NO.3	= 1.90%	TRA	= 0.07%
WELL NO.4	= 1.88%	TRB	= 0.77%
WELL NO.5	= 2.60%	HOIST	= 0.30%
WELL NO.6	= 2.84%	MCC-A1	= 0.07%
HSP NO.1	= 0.41%	HSP NO.3	= 0.58%
HSP NO.2	= 0.50%	HSP NO.4	= 0.70%

PROPOSED SINGLE LINE DIAGRAM

SCALE: N.T.S.

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CAD REF.: E-06 MCC SLD

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

PROPOSED SINGLE LINE DIAGRAM

DATE: APRIL 2020
SHEET: 34 of 41
DRAWING: E-6

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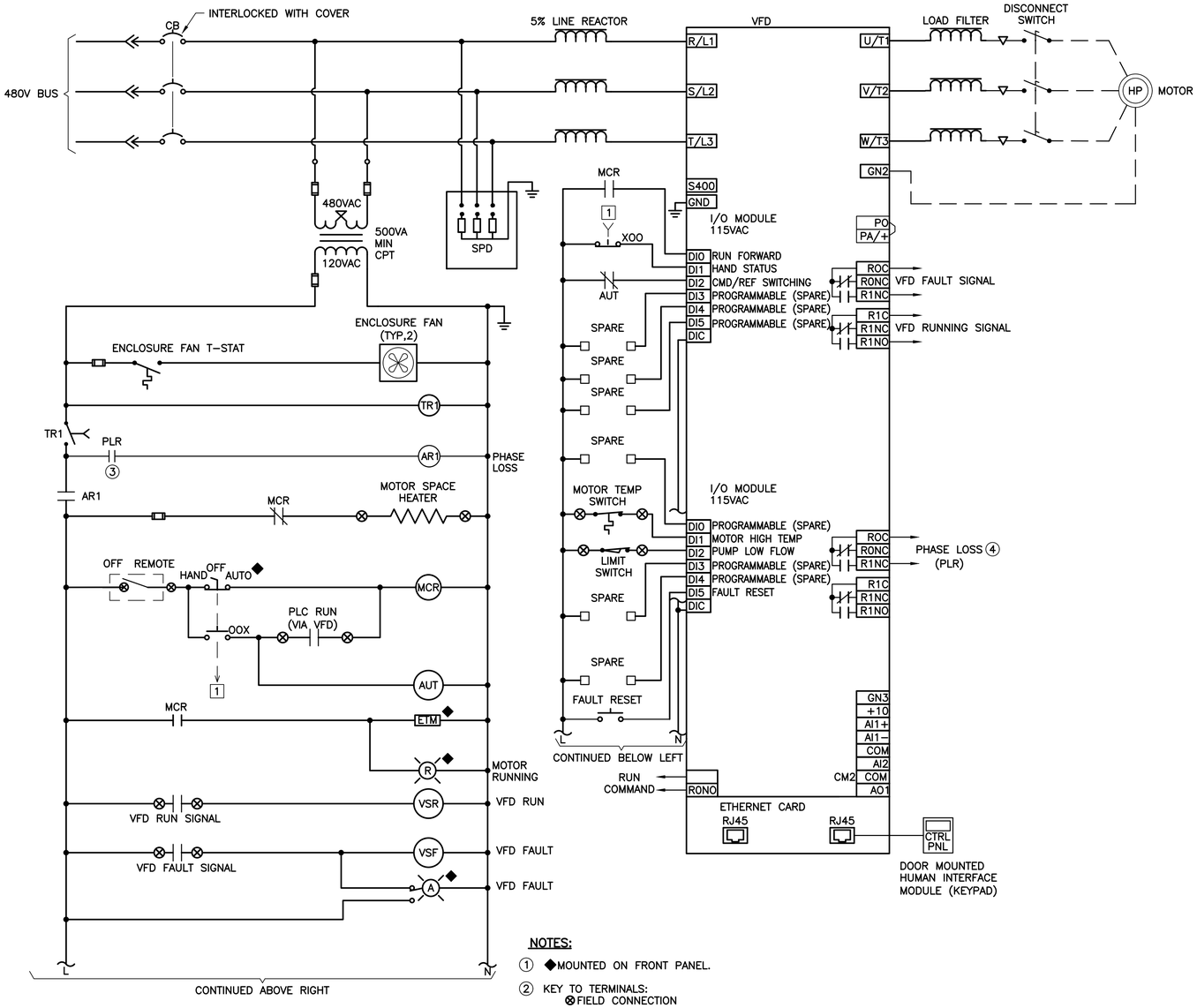
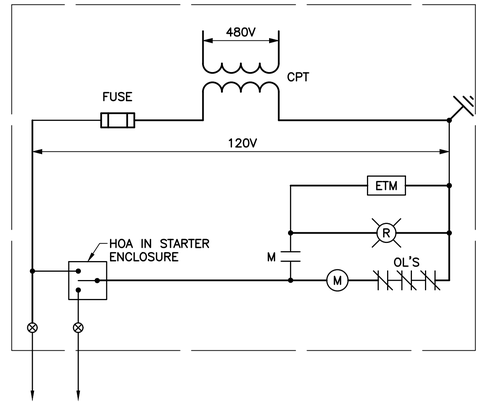


VFD ELEMENTARY DIAGRAM (TYP.)

N.T.S.



ELEMENTARY WIRING DIAGRAM

SCALE: N.T.S.

NOTES:

1. ◆MOUNTED ON FRONT PANEL.
2. KEY TO TERMINALS:
   ⊗FIELD CONNECTION
3. CONTACT SHOWN IN DE-ENERGIZED/ FAULT STATE.
4. PHASE LOSS IS INTERNAL TO THE VFD.

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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: E-07 ELEM VFD

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELEMENTARY DIAGRAMS

DATE: APRIL 2020
SHEET: 35 of 41
DRAWING: E-7

Acad Version : R23.0s (LMS Tech) Date\Time : Tue, 21 Apr 2020 - 8:02am Current Plotstyle : ByColor Layout Tab: 22 X 34
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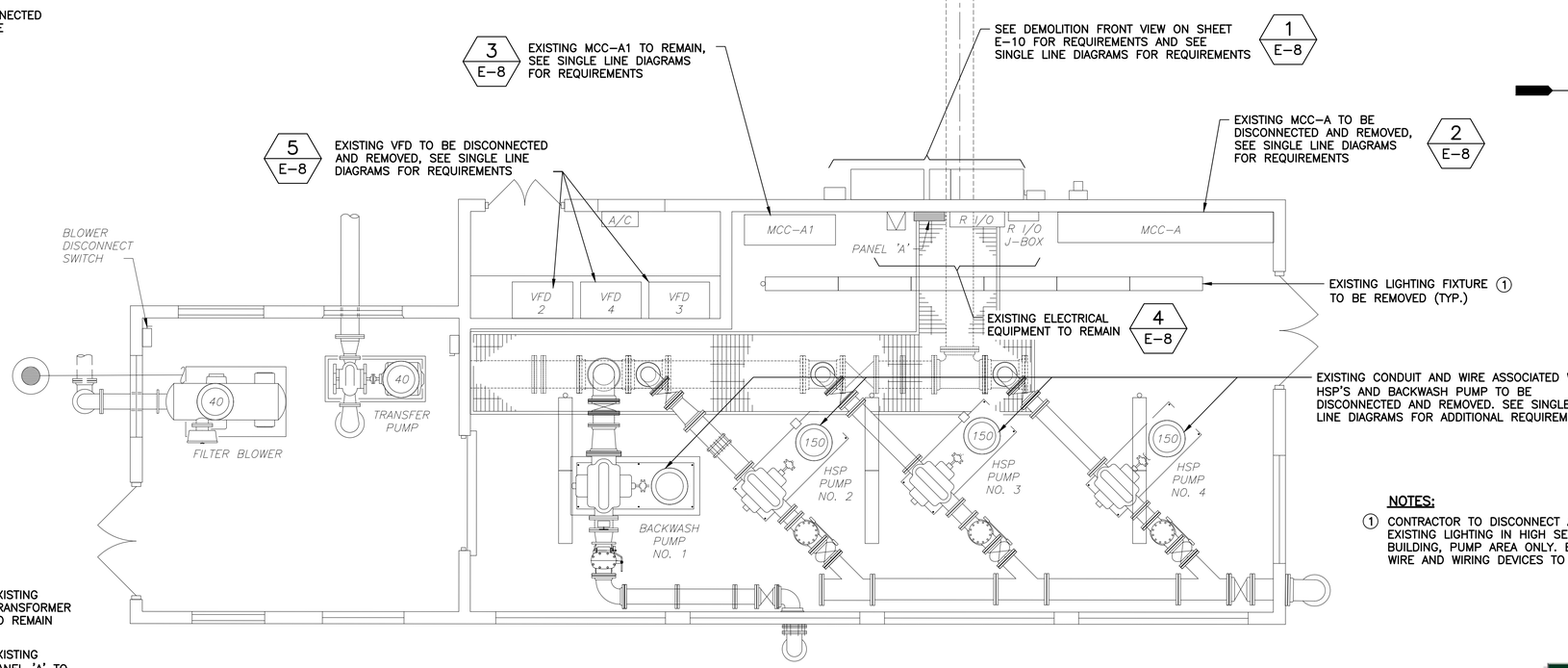
1 E-8 **FIGURE NO. 1**
SCALE: N.T.S.

2 E-8 **FIGURE NO. 2**
SCALE: N.T.S.

3 E-8 **FIGURE NO. 3**
SCALE: N.T.S.

4 E-8 **FIGURE NO. 4**
SCALE: N.T.S.

5 E-8 **FIGURE NO. 5**
SCALE: N.T.S.



EXISTING HSP BUILDING ELECTRICAL DEMOLITION PLAN

SCALE: 1/4"=1'-0"
1 0 1 2 3 7'

NOTES:

(1) CONTRACTOR TO DISCONNECT AND REMOVE EXISTING LIGHTING IN HIGH SERVICE PUMP BUILDING, PUMP AREA ONLY. EXISTING CONDUIT, WIRE AND WIRING DEVICES TO REMAIN.

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DRAWN: RRM
CHECKED: DD
APPROVED: LMR

LILLIAN M. REYES, P.E.
No. 50780

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Phone: 561-655-6175 ● Fax: 561-655-6179
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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: E-08 HSP BLDG DEMO

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

EXISTING HIGH SERVICE PUMP BUILDING
ELECTRICAL DEMOLITION PLAN

DATE: APRIL 2020
SHEET: 36 of 41
DRAWING: E-8

W:\2_Active Projects\Baxter Woodman\Lantana\WTP Filter and HSP R&R\6_Bid Set Submittal\Dwgs\E-08 HSP BLDG DEMO.dwg, 22 X 34, 4/21/2020 8:02:57 AM, rmeeks
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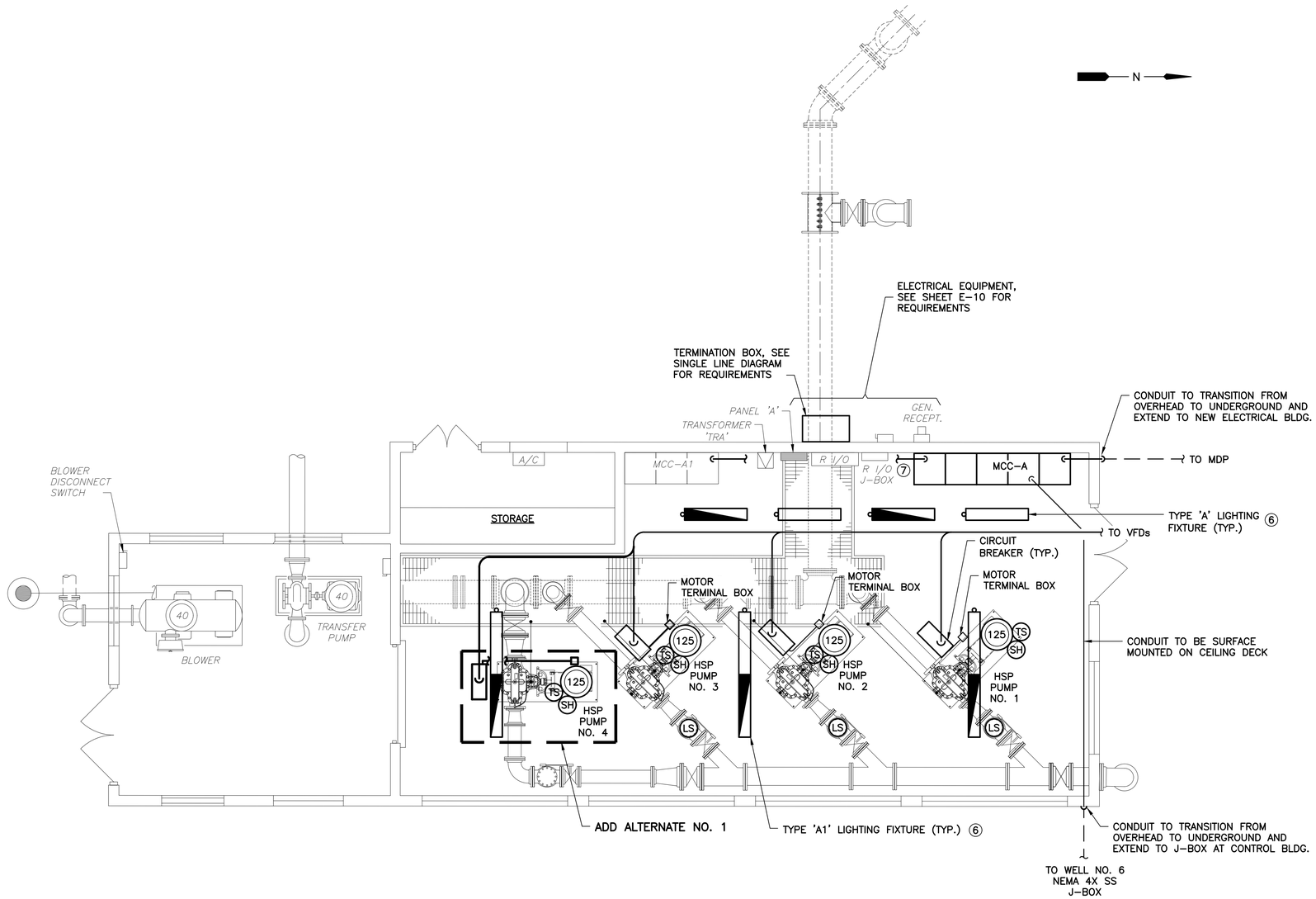
Date\Time : Tue, 21 Apr 2020 - 8:02am



EXISTING HSP BUILDING ELECTRICAL PLAN

SCALE: 1/4"=1'-0"

1 0 1 2 3 7'

NOTES:

1. CONTRACTOR SHALL PROVIDE NEW MOTOR CONTROL CENTER (MCC) WITH 12" HIGH SUPPORT BASE. BASE SHALL BE PART OF THE EQUIPMENT AND SUPPLIED BY MCC MANUFACTURER. THE BASE SHALL PROVIDE A WIREWAY UNDER THE NEW MCC FOR PULLING WIRES TO THE EXISTING CONDUITS. CONTRACTOR SHALL VERIFY EXACT CONDUIT OPENINGS AND PROVIDE LAYOUT TO MANUFACTURER FOR COORDINATION OF THE BASE AND THE SUPPORT BRACKETS.
2. NO WORK SHALL BE DONE TO EXISTING MCC UNTIL NEW MCC IS DELIVERED TO THE SITE. AT THAT TIME, THE CONTRACTOR SHALL COORDINATE THE REQUIRED SHUTDOWN OF THE ELECTRICAL SERVICE TO THE BUILDING.
3. MCC EQUIPMENT SHALL BE COORDINATED TO BE REPLACED IN A ONE WEEK TIME FRAME INCLUDING ALL NECESSARY INSPECTIONS AND START-UPS.
4. REFER TO ELECTRICAL SPECIFICATIONS AND REQUIREMENTS FOR MCC.
5. CONTRACTOR TO FURNISH AND INSTALL LED TYPE FIXTURES, TIE INTO EXISTING CONDUIT, WIRE AND WIRING DEVICES.
6. NEW LIGHTING FIXTURES TO BE TIED INTO EXISTING CONDUIT AND SWITCHES WITH 2#12 & 1#12 GND.
7. CONDUIT TO EXTEND OVERHEAD TO EXISTING 'MCC-A1'.

ADD ALTERNATE NOTES:

1. CONDUIT, WIRE, SUPPORT BRAKETS, ETC., CIRCUIT BREKER ENCLOSURE , LIMIT SWITCH, THERMAL SWITCH AND SPACE HEATER ASSOCIATED WITH HIGH SERVICE PUMP NO. 4.

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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: E-09 HSP BLDG PRO

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

EXISTING HIGH SERVICE PUMP BUILDING ELECTRICAL PLAN

DATE: APRIL 2020
SHEET: 37 of 41
DRAWING: E-9

Acad Version : R23.0s (LMS Tech)
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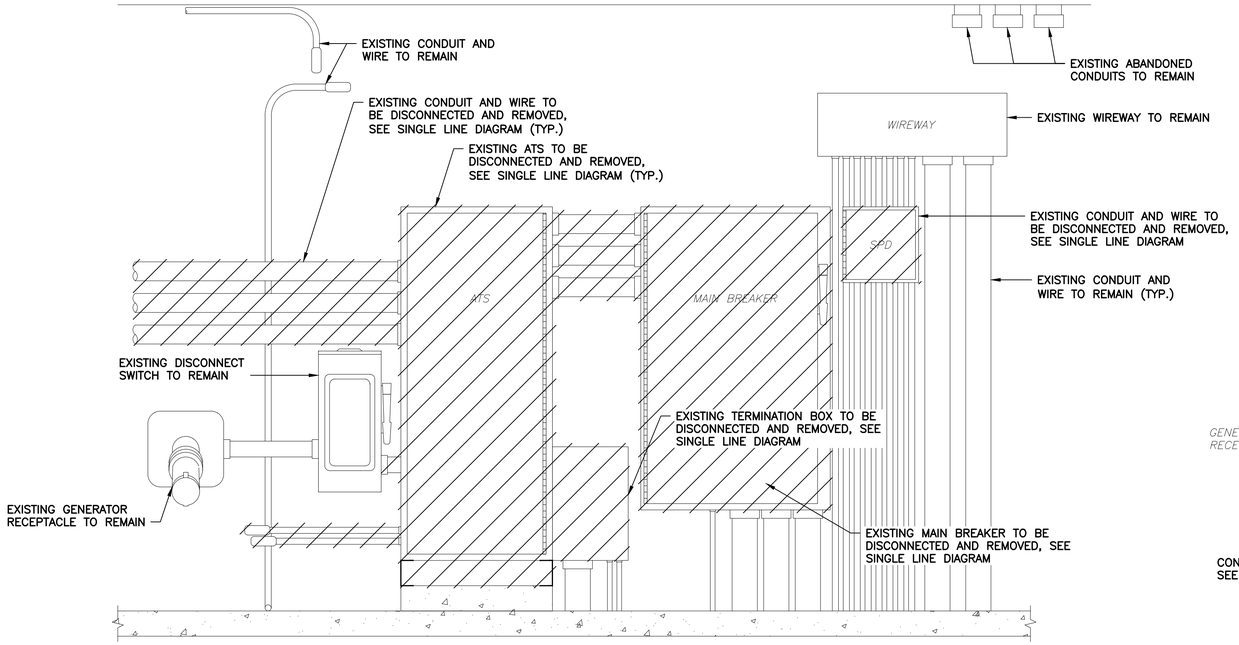
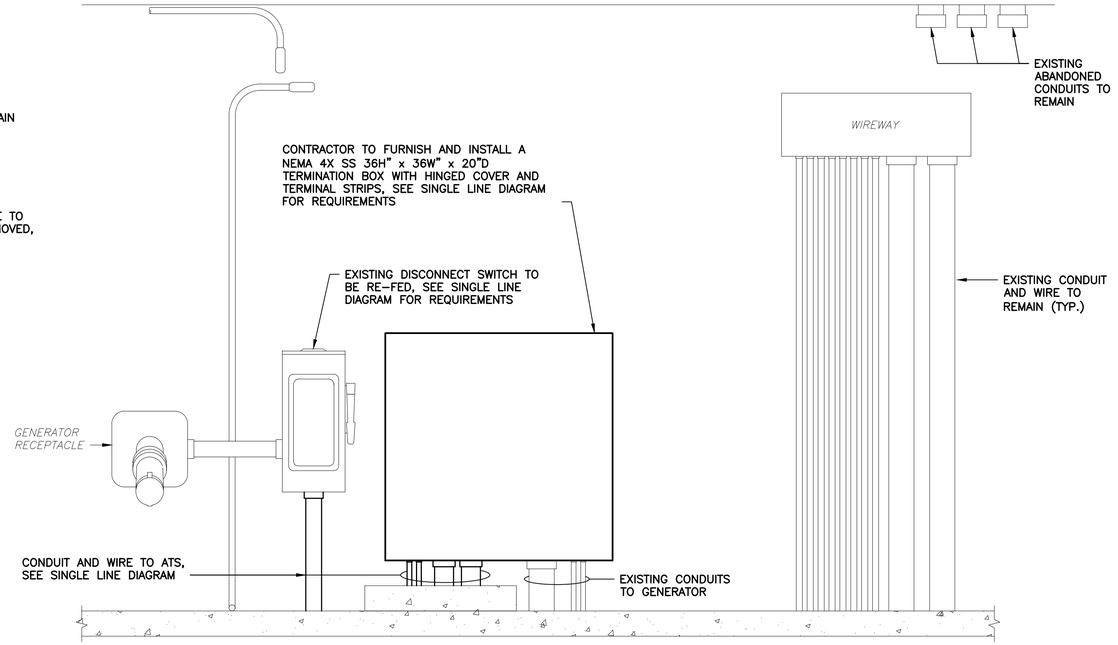


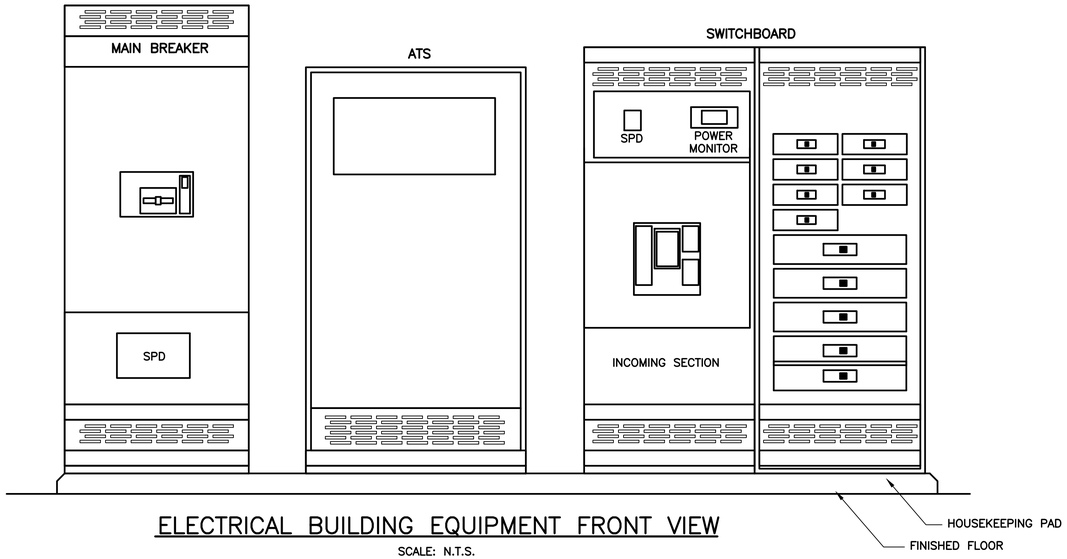
EXISTING EQUIPMENT DEMOLITION FRONT VIEW

SCALE: N.T.S.



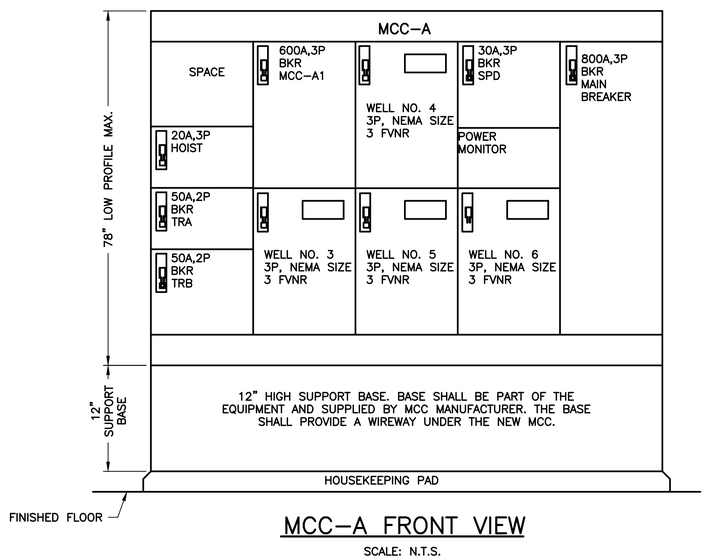
PROPOSED EQUIPMENT FRONT VIEW

SCALE: N.T.S.



ELECTRICAL BUILDING EQUIPMENT FRONT VIEW

SCALE: N.T.S.



MCC-A FRONT VIEW

SCALE: N.T.S.

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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: E-10 EQUIP FV

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

EQUIPMENT FRONT VIEWS

DATE: APRIL 2020
SHEET: 38 of 41
DRAWING: E-10

Acad Version : R23.0s (LMS Tech)
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Date\Time : Tue, 21 Apr 2020 - 8:03am
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DISCONNECT AND REMOVE ABANDONED DISCONNECT SWITCH, CONDUIT TO BE CUT AT SLAB AND ABANDONED BELOW GRADE

6 / E-11 WELL NO. 3 FIGURE NO. 6
SCALE: N.T.S.

CONTRACTOR TO REPAIR/REPLACE CONDULET

8 / E-11 WELL NO. 5 FIGURE NO. 6
SCALE: N.T.S.

CONTRACTOR TO REPAIR CONDUIT

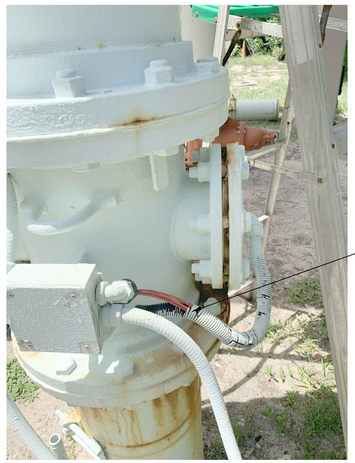
10 / E-11 FIGURE NO. 10
SCALE: N.T.S.

DISCONNECT AND REMOVE ABANDONED DISCONNECT SWITCH, CONDUIT TO BE CUT AT SLAB AND ABANDONED BELOW GRADE

7 / E-11 WELL NO. 4 FIGURE NO. 7
SCALE: N.T.S.

DISCONNECT AND REMOVE ABANDONED DISCONNECT SWITCH, CONDUIT TO BE CUT AT SLAB AND ABANDONED BELOW GRADE

9 / E-11 WELL NO. 5 FIGURE NO. 9
SCALE: N.T.S.



CONTRACTOR TO REPAIR CONDUIT

11 / E-11 FIGURE NO. 11
SCALE: N.T.S.

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ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018-05
CAD REF.: E-11 FIG

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL DEMOLITION DETAILS

DATE: APRIL 2020
SHEET: 39 of 41
DRAWING: E-11

Acad Version : R23.0s (LMS Tech)
User Name : rmeeks
Date\Time : Tue, 21 Apr 2020 - 8:03am
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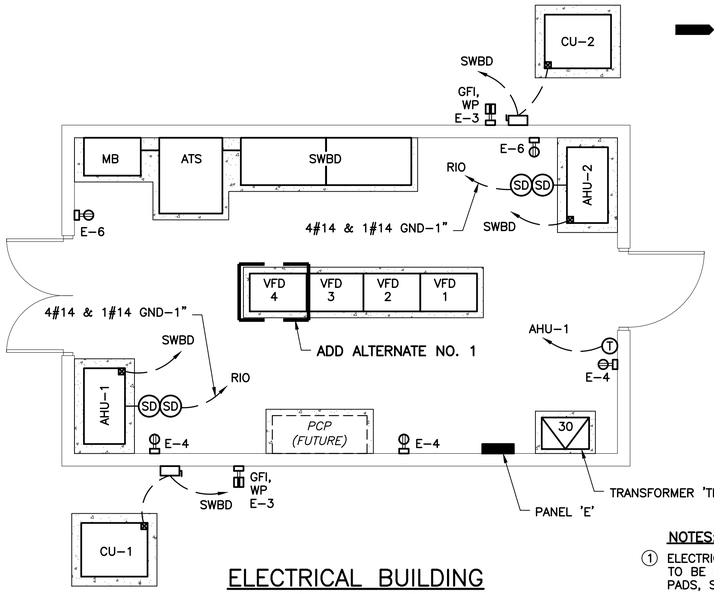


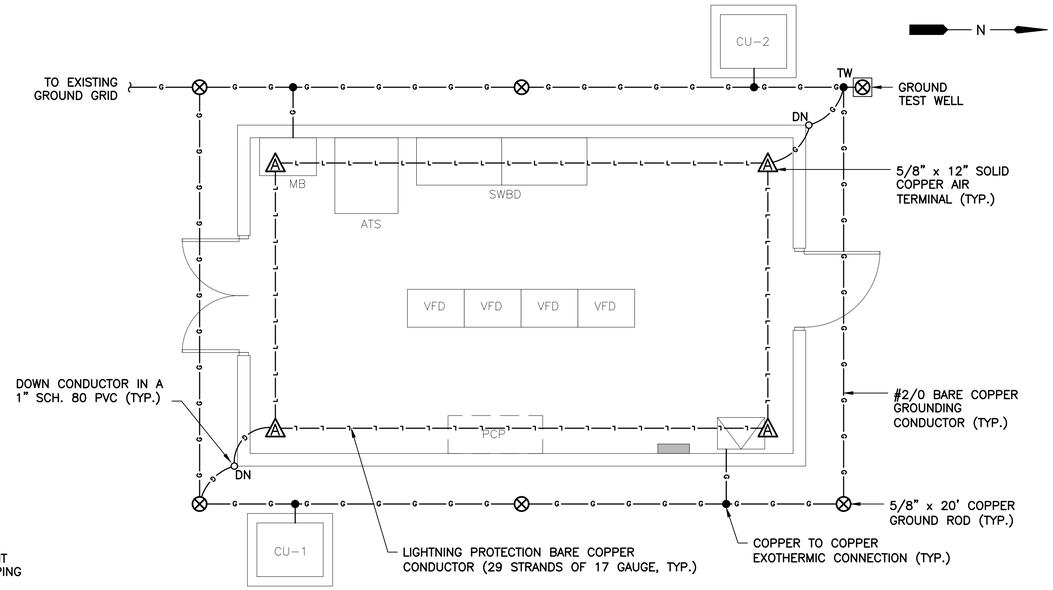
ELECTRICAL BUILDING ELECTRICAL PLAN

SCALE: 1/4"=1'-0"

1 0 1 2 3 7'

NOTES:

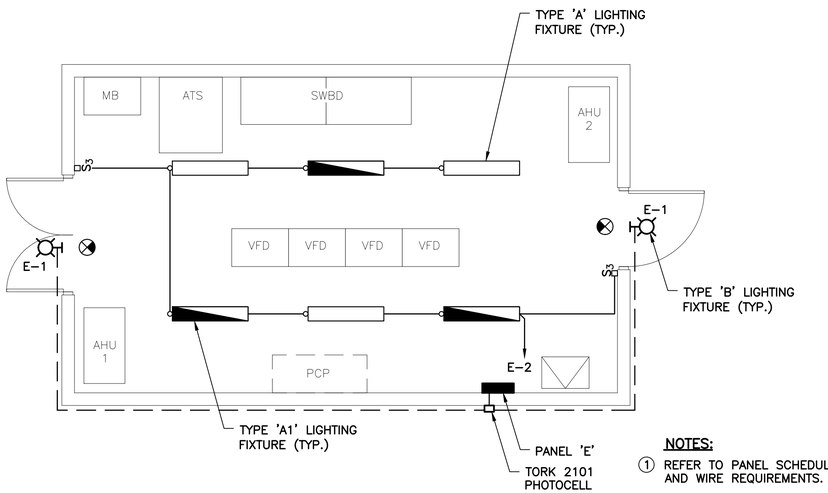
1. ELECTRICAL EQUIPMENT AND HVAC EQUIPMENT TO BE INSTALLED ON CONCRETE HOUSEKEEPING PADS, SEE STRUCTURAL DRAWINGS.



ELECTRICAL BUILDING LIGHTNING PROTECTION & GROUNDING PLAN

SCALE: 1/4"=1'-0"

1 0 1 2 3 7'



ELECTRICAL BUILDING LIGHTING PLAN

SCALE: 1/4"=1'-0"

1 0 1 2 3 7'

NOTES:

1. REFER TO PANEL SCHEDULES FOR CONDUIT AND WIRE REQUIREMENTS.
2. EMERGENCY LIGHTING FIXTURES SHALL BE WIRED TO THE NORMAL LIGHTING CIRCUIT OF THE ROOM IT SERVES AND TO THE LINE SIDE OF THE NEAREST LIGHTING SWITCH.

LIGHTING FIXTURE SCHEDULE

TYPE	WATT	DESCRIPTION	MANUFACTURER INFORMATION
A	45	4'-0" LONG LED FIXTURE WITH DIE-CUT CLOSED CELL NEOPRENE GASKET SEALS/HOUSING. 45 WATT 5000 K LED WITH DIMMINS CONSTANT LED DRIVER. U.L. LISTED.	KENALL NOVA 1 N548 SERIES (7100)-LED OR EQUAL
A1	45	4'-0" LONG LED FIXTURE WITH DIE-CUT CLOSED CELL NEOPRENE GASKET SEALS/HOUSING. 45 WATT 5000 K LED WITH DIMMINS CONSTANT LED DRIVER WITH PHILLIPS BODINE BSL310 EMERGENCY BATTERY BACK-UP. U.L. LISTED.	KENALL NOVA 1 N548 SERIES (7100)-LED OR EQUAL
B	60	FULL CUT-OFF WALLPACK. DECORATIVE, DIE-CAST ALUMINUM HOUSING AND DOOR. TYPE III OPTICAL PRECISION LENS. 120V INTEGRAL BALLAST WITH 10C LEDs, 1000 mA DRIVE CURENT. 5000 K COLOR TEMPERATURE WITH 0-10V DIMMING CONTROL	LITHONIA LIGHTING D-SERIES SIZE 1 OR EQUAL
⊗	5	EXIT SIGN W/CAST ALUMINUM HOUSING & ALUMINUM STENCIL FACE, BLACK BAKED ENAMEL FINISH, SEALED NICKEL CADMIUM BATTERY, SELF CONTAINED AUTO-CHARGING, WALL OR CEILING MOUNTED AS REQUIRED. 120V-AC, 12V-DC.	BEGHELLI OR APPROVED EQUAL

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ENGINEER NO.: 181052.40
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PROJECT NO.: BW2018-05
CAD REF.: E-12 ELEC BLDG

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL BUILDING ELECTRICAL PLANS

DATE: APRIL 2020
SHEET: 40 of 41
DRAWING: E-12

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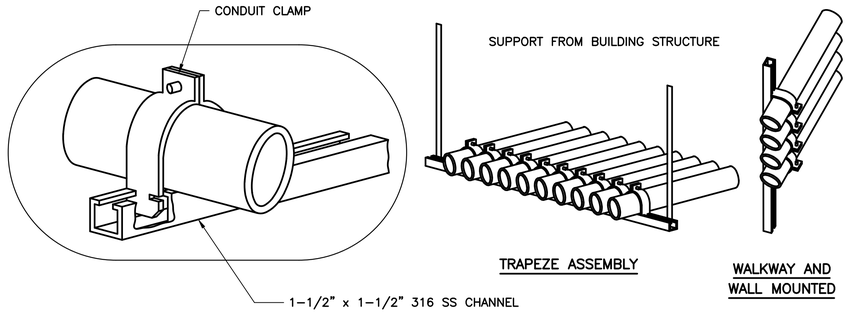
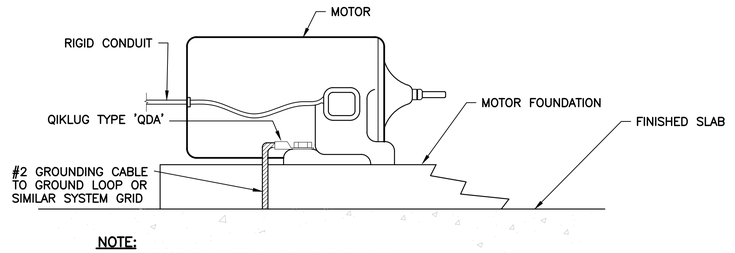


NOTES:

① ALL MOUNTING HARDWARE SHALL BE 316 STAINLESS STEEL.

CONDUIT PIPE STRAP MOUNTING DETAILS

N.T.S.

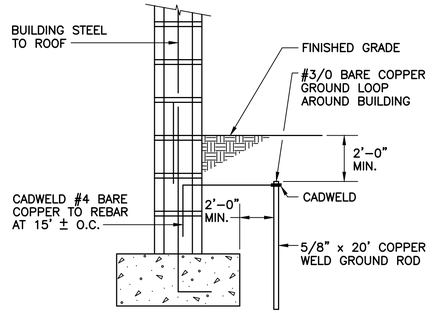


NOTE:

THIS GROUND IS IN ADDITION TO THE GROUND FROM THE MAIN ELECTRICAL SERVICE.

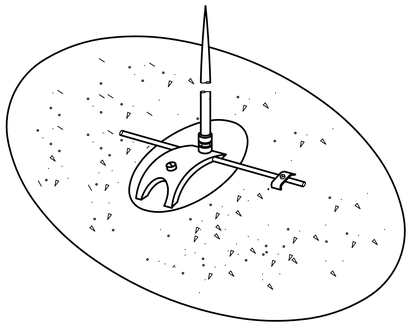
EQUIPMENT GROUNDING DETAIL

SCALE = N.T.S.



BUILDING STRUCTURE BONDING

N.T.S.



FLAT ROOF BASE

LEGEND:

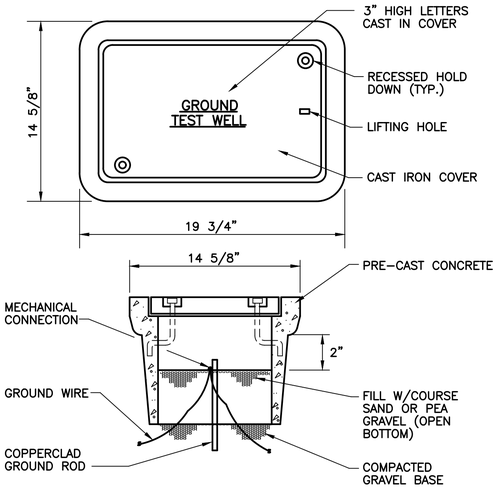
- △ – 5/8" X 12" SOLID COPPER AIR TERMINAL WITH ADHESIVE BASE.
- ● – CADWELD
- ⊗ – 5/8" X 20'–0" (MIN) COPPER GROUND ROD

LIGHTNING PROTECTION INSTALLATION NOTES:

1. INSTALLATION SHALL COMPLY IN ALL RESPECTS TO L.P.I. CODE 175. INSTALLATION SHALL BE MADE BY OR UNDER THE SUPERVISION OF AN L.P.I. CERTIFIED MASTER INSTALLER. COMPLETED INSTALLATION TO RECEIVE SYSTEM CERTIFICATION INCLUDING SUBMITTAL OF FORMS L.P.I. 175–A AND 175–B.
2. ALL MATERIALS SHALL BE UNDERWRITERS LABORATORIES APPROVED WITH "A" LABEL ON EACH AIR TERMINAL AND "B" LABEL AT 10'–0" ALONG ALL MAIN CONDUCTORS. COMPLETED INSTALLATION AS SHOWN SHALL BEAR U.L. MASTER LABEL "C" AS PER U.L. CODE 96A.
3. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODES.
4. ALL CABLE TO CABLE, CABLE TO LUG & CABLE TO GROUND ROD CONNECTIONS SHALL BE MADE WITH CADWELD.

AIR TERMINAL DETAILS

N.T.S.



GROUND TEST WELL

N.T.S.

PANEL: E						BUS: 100 AMP				VOLT: 120/208V–3φ–4W					
LOCATION: ELECTRICAL BLDG.						MAINS: MB				REMARKS: –					
MOUNTING: SURFACE						POLES: 42				A.I.C. SYMM: 22,000 AIC					
AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA A	B	C	BUS A B C	BUS KVA A	B	C	LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS
20	1	12	12	3/4"	EXTERIOR LIGHTING	0.50			1 2	0.60			INTERIOR LIGHTING	12	12	3/4"	1	20
20	1	12	12	3/4"	EXTERIOR RECEPTACLES		0.36		3 4		0.54		INTERIOR RECEPTACLES	12	12	3/4"	1	20
20	1	–	–	–	SPARE			–	5 6			0.36	INTERIOR RECEPTACLES	12	12	3/4"	1	20
20	1	–	–	–	SPARE	–			7 8	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		9 10		–		SPARE	–	–	–	1	20
20	1	–	–	–	SPARE			–	11 12			–	SPARE	–	–	–	1	20
20	1	–	–	–	SPARE	–			13 14	–			SPARE	–	–	–	1	20
20	1	–	–	–	SPARE		–		15 16		–		SPARE	–	–	–	1	20
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20	1	–	–	–	SPARE	–			19 20	–			SPARE	–	–	–	1	20
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–	–	–	–	–	SPACE	–			31 32	–			SPACE	–	–	–	–	–
–	–	–	–	–	SPACE		–		33 34		–		SPACE	–	–	–	–	–
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–	–	–	–	–	SPACE	–			37 38	0.10			SPD	6	10	–	3	30
–	–	–	–	–	SPACE		–		39 40		0.10		–	–	–	–	–	–
–	–	–	–	–	SPACE			–	41 42			0.10	–	–	–	–	–	–
TOTAL (PHASE):						0.50	0.36	0.00		0.70	0.64	0.46	NOTES:					
TOTAL KVA:									2.66				–					
TOTAL AMPS:									7.38									
TOTAL DEMAND AMPS:									7.38									

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CHECKED: DD
APPROVED: LMR

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VERIFY SCALE
1"
BAR IS ONE INCH ON FULL SIZE (22x34) ORIGINAL DRAWING. ADJUST SCALES AS NECESSARY.

ENGINEER NO.: 181052.40
CLIENT
PROJECT NO.: BW2018–05
CAD REF.: E–13 DTLS

TOWN OF LANTANA
WATER TREATMENT PLANT
HIGH SERVICE PUMP IMPROVEMENTS

ELECTRICAL DETAILS

DATE: APRIL 2020
SHEET: 41 of 41
DRAWING: E–13

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