

DEFOREST AVENUE IMPROVEMENT PROJECT

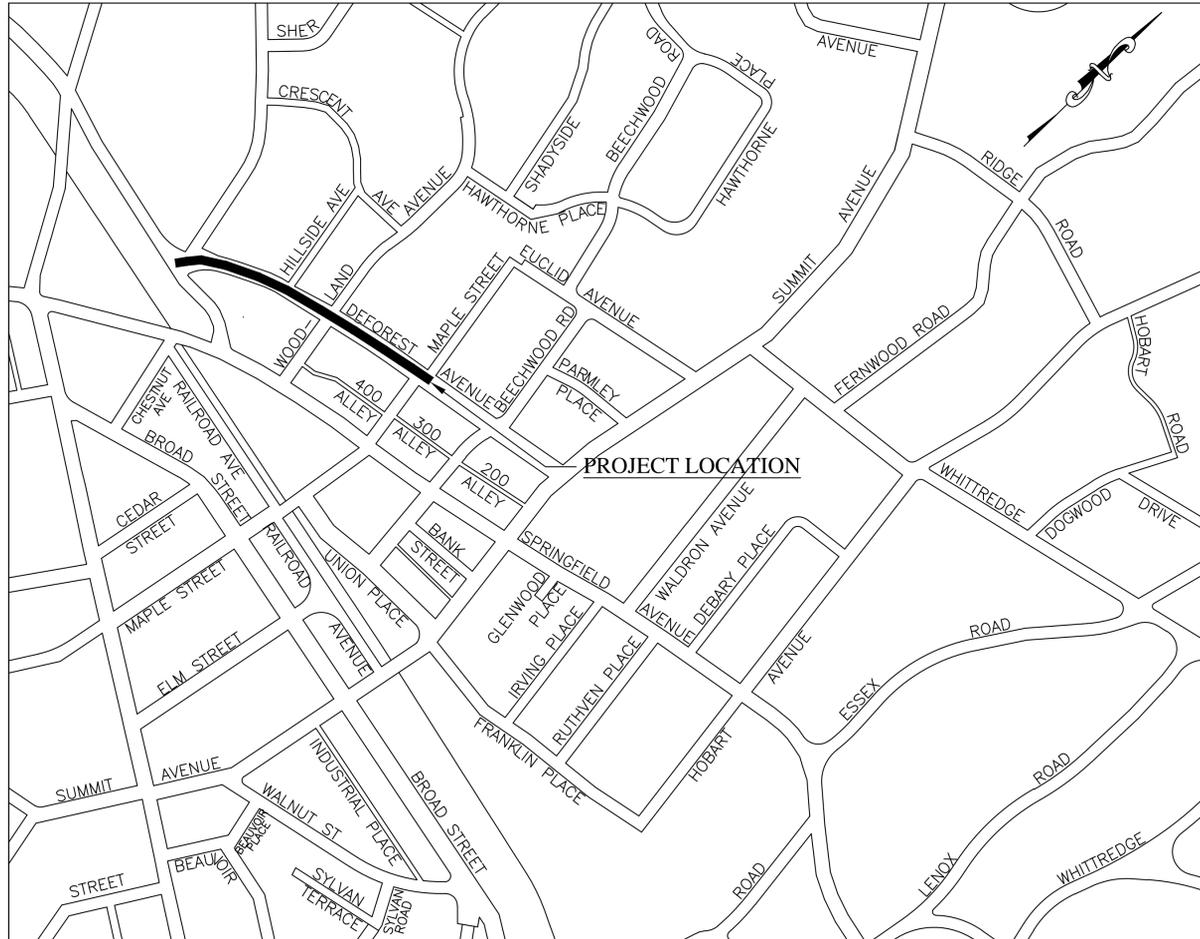
SECTION 2 - 2015 NJDOT GRANT PROJECT

CITY OF SUMMIT

UNION COUNTY, NEW JERSEY

GENERAL CONSTRUCTION NOTES:

- THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE SUMMIT POLICE DEPARTMENT 72 HOURS PRIOR TO THE START OF ANY WORK AND SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITHIN 30 DAYS OF THE DAY THE PROJECT IS AWARDED TO CONTRACTOR.
- NO SEPARATE PAYMENT SHALL BE MADE FOR FLAGGERS. ALL COSTS FOR FLAGGERS SHALL BE INCLUDED IN VARIOUS ITEMS IN THE BID PROPOSAL.
- THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ACCESS TO ALL DRIVEWAYS DURING CONSTRUCTION. THE CONTRACTOR SHALL INSTALL AND MAINTAIN DENSE GRADED AGGREGATE OR HOT MIX ASPHALT TO PROVIDE A RIDING SURFACE FOR VEHICLE ACCESS TO EACH PROPERTY. NO SEPARATE PAYMENT SHALL BE MADE FOR MAINTAINING ACCESS TO DRIVEWAYS. ALL DRIVEWAY ACCESS COSTS SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE PROJECT.
- THE ROAD IS TO BE PROOF ROLLED AFTER MILLING IS COMPLETED BUT BEFORE FINAL PAVING AT THE ENGINEERS DISCRETION. PROOF ROLLING MUST BE COMPLETED WITH A LOADED DUMP TRUCK IN THE PRESENCE OF THE ENGINEER OR PROJECT INSPECTOR. COSTS SHALL BE INCLUDED IN BID ITEM FOR MILLING.
- THE CONTRACTOR SHALL LEAVE THE MILLED ROAD UNPAVED FOR 24 HOURS AND PROOF ROLL PRIOR TO PAVING. THE CONTRACTOR SHALL INSTALL HOT MIX ASPHALT BASE COURSE AS A TEMPORARY SURFACE IN AREAS DEEMED NECESSARY BY THE ENGINEER. NO SEPARATE PAYMENT SHALL BE MADE FOR TEMPORARY PAVEMENT. ALL TEMPORARY PAVEMENT COSTS SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE PROJECT.
- ALLOWABLE START TIME IS 8:00 AM FOR CONCRETE WORK AND ALL OTHER WORK EXCEPT FOR MILLING AND PAVING. THE CONTRACTOR SHALL MAKE PROVISIONS FOR MATERIAL AND EQUIPMENT STORAGE. THE CONTRACTOR SHALL COORDINATE THE STORAGE OF MATERIAL AND EQUIPMENT WITH THE ENGINEER AND THE POLICE DEPARTMENT. ALL COSTS FOR MATERIAL AND EQUIPMENT STORAGE SHALL BE INCLUDED IN THE BID ITEM "PARKING AND MATERIAL STORAGE".
- ALL TRAFFIC CONTROL AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. AND MUNICIPAL TRAFFIC ORDINANCES. THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO THE POLICE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK. TRAFFIC CONTROL PLANS SHALL INCLUDE AT A MINIMUM THE FOLLOWING SITUATIONS: 1) ROAD CLOSED, 2) LANE CLOSED, 3) SHOULDER CLOSED. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL ON THE PROJECT. ANY COSTS ASSOCIATED WITH TRAFFIC CONTROL SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE PROJECT.
- NO DRAINS ARE TO BE INSTALLED UNDER DRIVEWAY APRONS OR THROUGH DROP CURBS.
- CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ALL UTILITIES TO RAISE OR LOWER MANHOLES, METERS, VALVES, ETC. TO GRADE AS WORK PROGRESSES. ALL COSTS FOR COORDINATION WITH UTILITY COMPANIES SHALL BE INCLUDED IN THE BID ITEM "UTILITY COORDINATION" IN THE PROJECT. THE LOCATIONS OF SUBSURFACE UTILITIES ARE APPROXIMATE AND ARE SHOWN FOR ILLUSTRATIVE PURPOSES. THE CONTRACTOR IS RESPONSIBLE TO CALL FOR A MARK OUT OF UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY DAMAGED CONCRETE BEFORE ACCEPTANCE OF THE PROJECT BY THE CITY AT NO ADDITIONAL COST.
- THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL TREES WITHIN THE PROJECT DURING CONSTRUCTION. DAMAGE TO EXISTING TREES WILL BE EVALUATED BY THE CITY FORESTER. THE PROJECT SPECIFICATIONS IMPOSES A PENALTY OF \$500 PER INCIDENT OF DAMAGE TO ANY TREE. ALL COSTS RELATED TO TREE PROTECTION ARE TO BE INCLUDED IN THE BID ITEM "MOBILIZATION".
- NO SEPARATE PAYMENT SHALL BE MADE FOR ANY SAW CUTTING REQUIRED ON THE PROJECT. COSTS FOR SAW CUTTING SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE BID PROPOSAL.
- THE CONTRACTOR IS RESPONSIBLE TO REPLACE/RESET ANY SPRINKLERS AND DOG FENCING DAMAGED/DISTURBED DURING CONSTRUCTION. THE COST FOR REPAIR/RESETTING SPRINKLERS AND REPAIRING DOG FENCING SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNERS FOR THE LOCATION OF THE SPRINKLERS AND DOG FENCES PRIOR TO THE START OF WORK.
- NO SEPARATE PAYMENT SHALL BE MADE FOR THE RESETTING OR REPLACEMENT OF ANY WALKWAYS CONSTRUCTED OF GRANITE BLOCK, BRICK, BRICK PAVERS, STONE, SLATE, ETC. NO SEPARATE PAYMENT SHALL BE MADE FOR THE INSTALLATION OF CURB ALONG DRIVEWAY APRONS AND DRIVEWAYS WHERE CURBING CURRENTLY EXISTS.
- NO SEPARATE PAYMENT SHALL BE MADE FOR EXCAVATION, UNCLASSIFIED, IN AREAS WITH UNSUITABLE SUB-BASE OR WHERE NO SUBBASE EXISTS. ALL UNSUITABLE AREAS SHALL BE REMOVED AND REPLACED WITH DENSE GRADED AGGREGATE WHERE DIRECTED BY THE ENGINEER. ALL COSTS ASSOCIATED WITH THE EXCAVATION AND DISPOSAL OF THE EXISTING SUB-BASE AND PLACEMENT OF DENSE GRADED AGGREGATE SHALL BE INCLUDED IN THE BID ITEM "FULL DEPTH REPAIR, IF AND WHERE DIRECTED".
- NO SEPARATE PAYMENT SHALL BE MADE FOR THE EXCAVATION OF UNCLASSIFIED MATERIAL BEHIND THE PROPOSED CURB. ALL COSTS ASSOCIATED WITH THE REMOVAL OF ANY EXISTING MATERIAL BEHIND THE PROPOSED CURB SHALL BE INCLUDED IN THE BID ITEM "CLEARING SITE".
- NO SEPARATE PAYMENT SHALL BE MADE FOR THE INSTALLATION AND MAINTENANCE OF ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES. ALL COSTS ARE TO BE INCLUDED IN THE BID ITEM "MOBILIZATION".
- THE CONTRACTOR IS RESPONSIBLE FOR THE STAKEOUT AND LAYOUT OF THE PROJECT. THE STAKEOUT AND LAYOUT IS TO BE PERFORMED BY A NEW JERSEY PROFESSIONAL LAND SURVEYOR. ALL COSTS ASSOCIATED WITH THE STAKEOUT AND LAYOUT OF THE PROJECT ARE TO BE INCLUDED IN THE BID ITEM "CONSTRUCTION LAYOUT". ALL GRADES ARE TO BE SET IN THE FIELD BY THE LAND SURVEYOR. THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER A PROFILE WITH THE SET GRADES PRIOR TO THE BEGINNING OF CONSTRUCTION. THE PROFILE IS SUBJECT TO THE APPROVAL OF THE ENGINEER.
- SHOP DRAWINGS IF ANY ARE TO BE SUBMITTED AT A MINIMUM OF THREE (3) WEEKS PRIOR TO CONSTRUCTION FOR ALL PROPOSED DRAINAGE STRUCTURES. ALL DRAINAGE STRUCTURES MUST BE DESIGNED BY A NEW JERSEY PROFESSIONAL ENGINEER. ALL SHOP DRAWINGS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- SITE SURVEY PROVIDED BY HATCH MOTT MCDONALD. 908-703-6000.
- ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR THE IMPROVEMENTS SHOWN SHALL BE IN ACCORDANCE WITH THE NEW JERSEY DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007" AND ALL APPLICABLE AMENDMENTS.
- ALL MILLING AND PAVING OPERATIONS SHALL BE PERFORMED AT NIGHT. WORK CAN BEGIN AT 9:00 PM AND SHALL CEASE BY 6:00 AM.



Funding Note:

This project is funded by the City of Summit and New Jersey Department of Transportation.

Survey Note:

The contractor is responsible for stakeout and vertical control of the project. Stakeout is required for the project. AutoCAD drawings are available for this project upon request. Cut sheets shall be submitted prior to the start of any work.

Project Safety Note:

The contractor(s) working on the project are responsible to ensure that all safety regulations of the Occupational Safety and Health Administration (OSHA) and the requirements of the State of New Jersey Department of Labor and Industry shall be adhered to on this project and that he or she shall instruct his or her personnel to follow these regulations. These regulations include, but are not limited to, the regulations concerning Trench Excavation, Competent Persons and Confined Space Regulations.

Specifications Note:

New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction 2007 and all of its amendments and Baseline Document Changes are to govern all construction here in.

UTILITIES

Public Service Electric & Gas Co.
48 Middle Avenue
Summit, NJ 07901

Verizon
445 Georges Road
North Brunswick, NJ 08902

Jersey Central Power and Light
300 Madison Avenue
Morristown, NJ 07960

City of Summit
Division of Public Works
41 Chatham Road
Summit, NJ 07901

Comcast Cablevision of New Jersey
300 Rahway Avenue 07901
Union, NJ 07083

New Jersey American Water Co.
167 JFK Parkway
Short Hills, NJ 07078

INDEX OF SHEETS	
SHEET	DESCRIPTION
1	TITLE SHEET-KEY MAP
2	ITEMS AND NOTES
3-4	CONSTRUCTION PLANS
5-7	DETAIL SHEETS
8-21	TRAFFIC SIGNAL PLANS

NO.	DATE	REVISIONS DESCRIPTION

DEFOREST AVENUE IMPROVEMENT PROJECT SECTION 2
 ROAD MILLING/PAVING AND IMPROVEMENTS
 COVER SHEET

CITY OF SUMMIT UNION CO., N.J.
 DIVISION OF ENGINEERING
 DEPARTMENT OF COMMUNITY SERVICES
 515 SPRINGFIELD AVENUE
 SUMMIT NJ 07901
 UNION COUNTY

Aaron J. Schragar
 Professional Engineer
 New Jersey Lic. No. 46143
 City Engineer

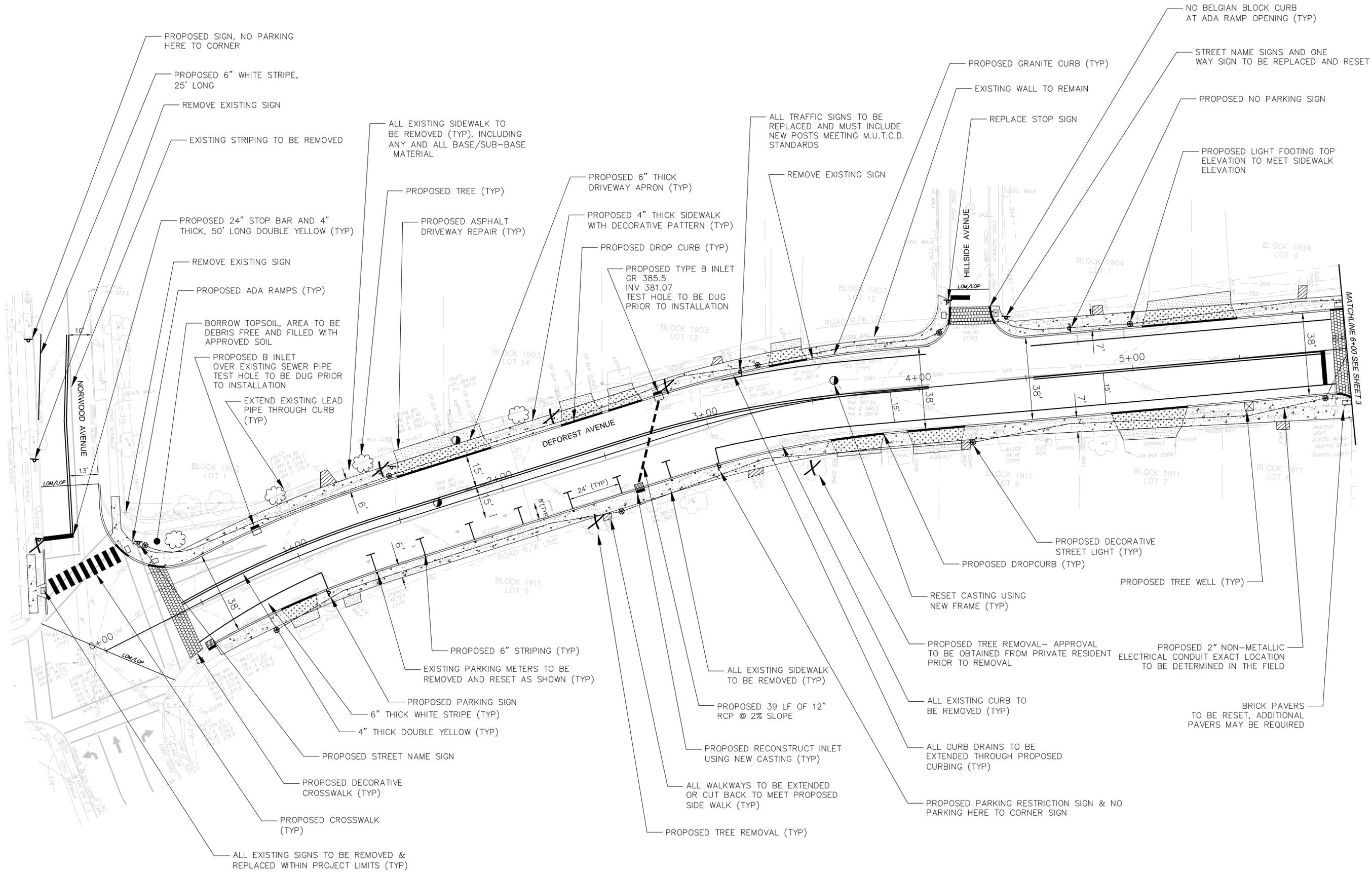


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4/1/2015

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1 OF 7



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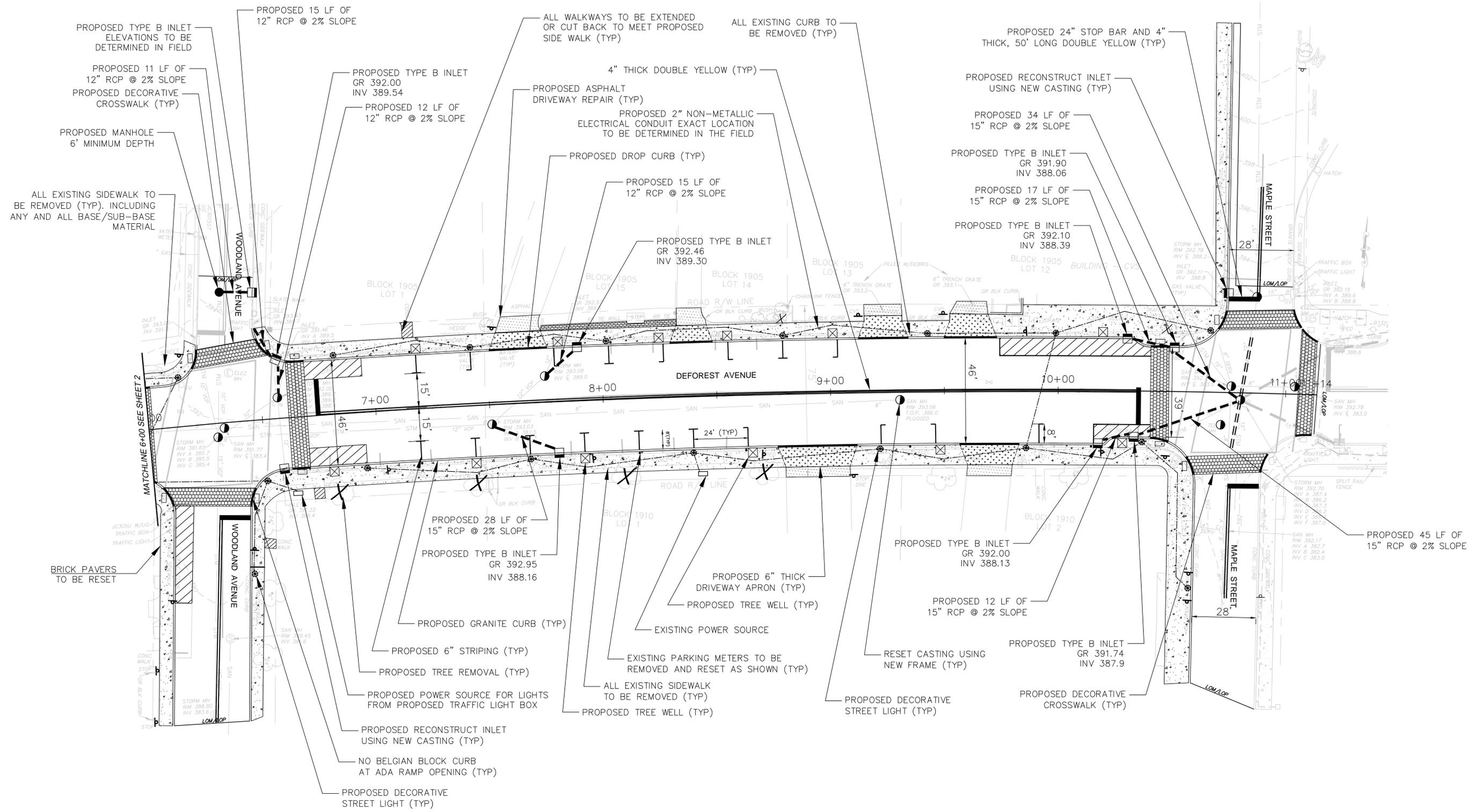
DEFOREST AVENUE IMPROVEMENT PROJECT
 SECTION 2 - 2015 NIDOT GRANT PROJECT
 KENT PLACE BOULEVARD TO MAPLE STREET
 CONSTRUCTION PLAN - 1

CITY OF SUMMIT UNION CO., N.J.
 DIVISION OF ENGINEERING
 DEPARTMENT OF COMMUNITY SERVICES
 512 SPRINGFIELD AVENUE
 SUMMIT NJ 07901
 UNION COUNTY

Aaron J. Schragger
 Professional Engineer
 New Jersey Lic. No. 46143
 City Engineer



DATE:
 4/1/2015
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 1" = 20'
 3 OF 7



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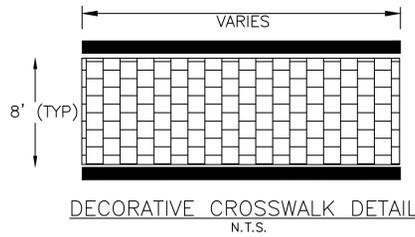
DEFOREST AVENUE IMPROVEMENT PROJECT
SECTION 2 - 2015 NJDOT GRANT PROJECT
KENT PLACE BOULEVARD TO MAPLE STREET
CONSTRUCTION PLAN - 2-

CITY OF SUMMIT UNION CO., N.J.
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 SUMMIT NJ 07901
 UNION COUNTY

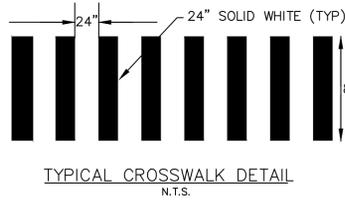
Aaron J. Schragger
 Professional Engineer
 New Jersey Lic. No. 46143
 City Engineer



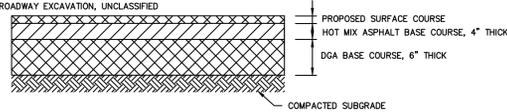
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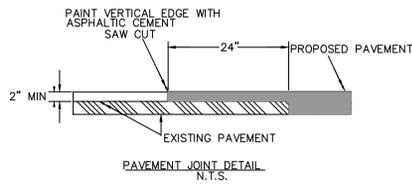
- Note:**
- 1) ALL CROSSWALKS MUST MEET ADA, NJDOT AND CITY OF SUMMIT STANDARDS
 - 2) THE STAMPED PATTERN IS TO BE A 8X8 TILE
 - 3) THE CROSSWALK TO BE A POLYMER CEMENT SLURRY SURFACE
 - 4) CROSSWALK IS TO HAVE 8" WHITE STRIPES ON EITHER SIDE
 - 5) TILE PATTERN COLOR TO BE BRICK RED
 - 6) CROSSWALK TO MATCH EXISTING DOWNTOWN CROSSWALKS



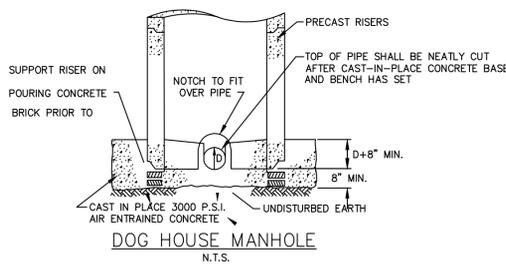
- NOTES**
1. REMOVE AND REPLACE ROADWAY BASE SHALL CONSIST OF THE REMOVAL OF UNSUITABLE ROADWAY BASE MATERIAL OF WHATEVER NATURE ENCOUNTERED TO A DEPTH OF AT LEAST 10" UNCOVERED AFTER MILLING OR VISIBLE PRIOR TO MILLING OR RESURFACING AND THE INSTALLATION OF AT LEAST 4" HOT MIX ASPHALT BASE COURSE AND 6" DGA. THE PERIMETER OF THE REPAIR SHALL BE SAWCUT.
 2. THE FOLLOWING ITEMS OF WORK ARE INCLUDED UNDER REMOVE AND REPLACE ROADWAY BASE:
 - SAWCUT
 - HOT MIX ASPHALT BASE COURSE
 - DGA
 - ROADWAY EXCAVATION, UNCLASSIFIED



FULL DEPTH REPAIR
N.T.S.

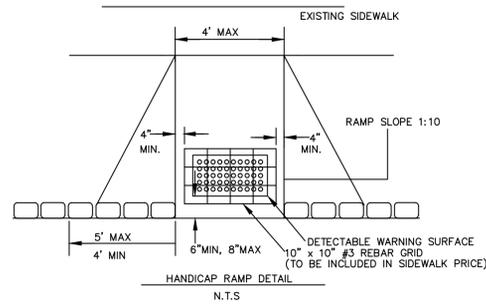


PAVEMENT JOINT DETAIL
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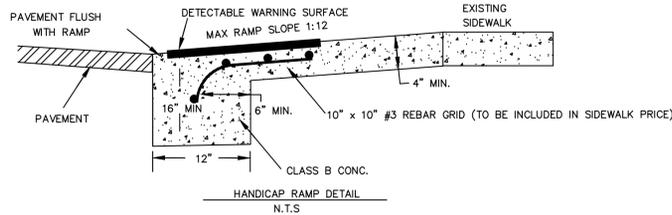


DOG HOUSE MANHOLE
N.T.S.

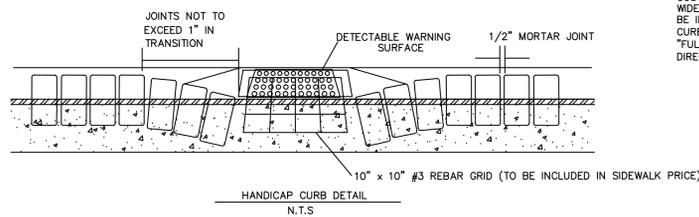
- NOTES:**
1. FOR DETAIL OF UPPER PART OF MANHOLE, SEE "STANDARD MANHOLE" DETAIL
 2. ACRYLIMIDE GEL GROUT INJECTION SHALL BE USED TO STOP LEAKS, IF ANY, AROUND MANHOLE SEAMS AND PIPES.



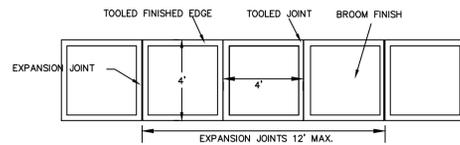
NOTE: GRANITE CURBING DOES NOT EXTEND THROUGH RAMP. ANY RAMP WHERE CURBING IS PLACED THROUGH THE OPENING WILL BE REMOVED AT THE CONTRACTORS EXPENSE.



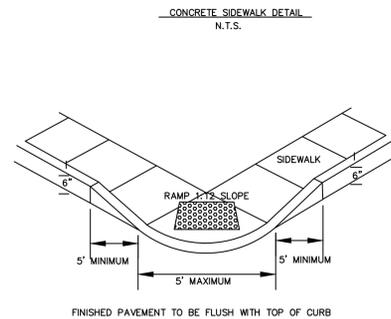
HANDICAP RAMP DETAIL
N.T.S.



HANDICAP CURB DETAIL
N.T.S.

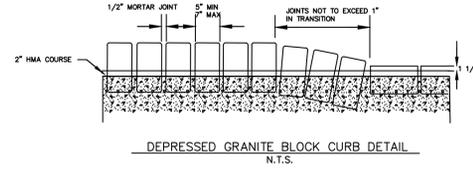


NOTE: 1) ALL SIDEWALK MUST BE SPRAYED WITH WHITE PIGMENTED CURING COMPOUND AFTER BROOM FINISHING. 2) CONCRETE TO BE POURED OVER 2" LAYER OF COMPACTED CLEAN STONE. 3) CONCRETE TO BE CLASS B 3500LB MIX.

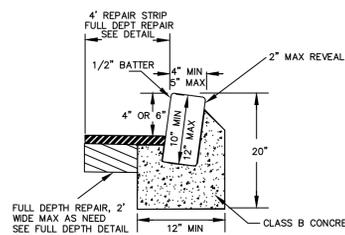


CONCRETE SIDEWALK DETAIL
N.T.S.

HANDICAP RAMP DETAIL (TYPICAL)
N.T.S.

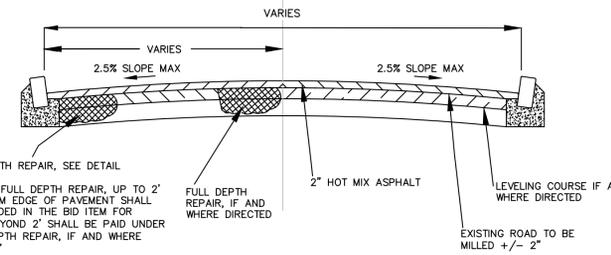


DEPRESSED GRANITE BLOCK CURB DETAIL
N.T.S.

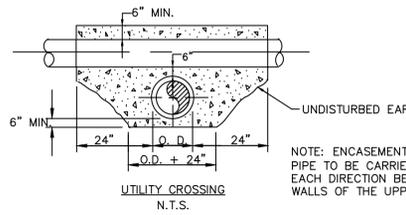


GRANITE BLOCK CURB DETAIL
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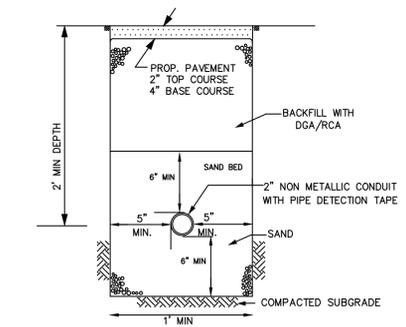
- CURB NOTES**
- 1) 4" THICK, COARSE AGGREGATE SIZE NO. 57 SHALL BE CONSTRUCTED UNDERNEATH PROPOSED CURB IN WET FIELD CONDITIONS AS DIRECTED BY THE ENGINEER. ALL COSTS FOR 4" THICK, COARSE AGGREGATE SIZE NO. 57 SHALL BE INCLUDED IN THE VARIOUS ITEMS BID IN THE PROJECT.
 - 2) TOP OF CURB SHALL NOT BE SET HIGHER THAN ADJACENT EXISTING OR PROPOSED SIDEWALK UNDER ANY CONDITION.
 - 3) FULL DEPTH REPAIR TO BE CONSTRUCTED ALONG THE ROAD EDGE OF NEW CURB UP TO 4" WIDE. COST TO BE INCLUDE IN PRICE OF CURB. SEE FULL DEPTH REPAIR DETAIL.



TYPICAL CROSS SECTION DETAIL
N.T.S.

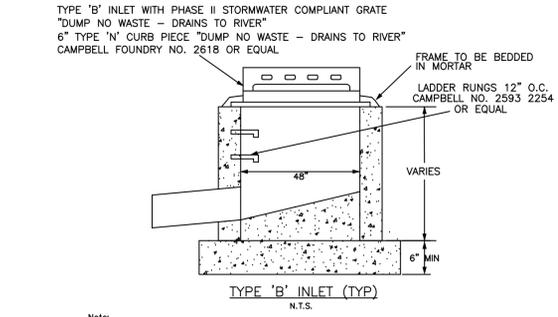


UTILITY CROSSING
N.T.S.



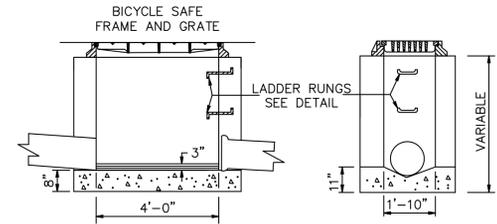
2" NON METALLIC CONDUIT
N.T.S.

- PIPE ITEM SHALL INCLUDE:**
- EXCAVATION
 - REMOVAL/HAULING OF EXCAVATION
 - PIPE
 - BEDDING/DGA/RCA/SAND
 - BACKFILLING
 - SAWCUTTING
 - TEMPORARY 6" BASE HMA REPAIR

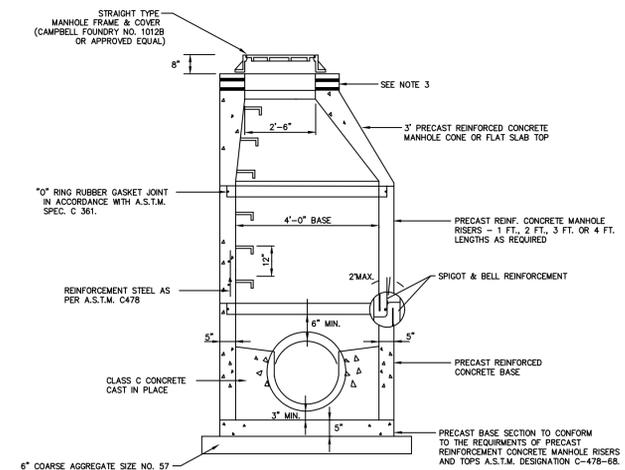


TYPE "B" INLET (TYP)
N.T.S.

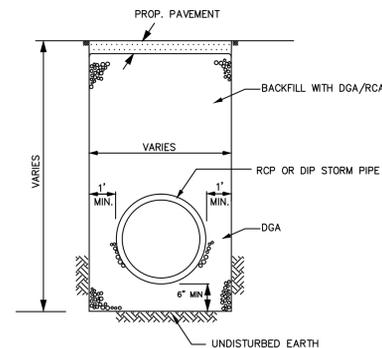
- Note:**
- 1) ALL PIPES ARE TO BE CUT FLUSH WITH BASIN WALL.
 - 2) COST FOR FRAME AND GRATE ARE INCLUDED IN THE BID PRICE FOR THE BASIN.
 - 3) SHOP DRAWINGS MUST BE SUBMITTED BY A NEW JERSEY PROFESSIONALLY LICENSED ENGINEER FOR ALL PROPOSED PRECAST INLETS THREE (3) WEEKS PRIOR TO CONSTRUCTION. SHOP DRAWINGS ARE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER.
 - 4) GRATE MUST BE BICYCLE SAFE.



TYPE "A" INLET DETAIL
N.T.S.



STORM MANHOLE
N.T.S.



STORM PIPE TRENCH DETAIL
N.T.S.

- PIPE ITEM SHALL INCLUDE:**
- EXCAVATION
 - REMOVAL/HAULING OF EXCAVATION
 - PIPE
 - BEDDING/DGA
 - BACKFILLING
 - SAWCUTTING
 - TEMPORARY 6" BASE HMA REPAIR

NO.	DATE	REVISIONS	DESCRIPTION

DOWNTOWN ROAD AND BEAUTIFICATION PROJECT
ROAD MILLING/PAVING AND IMPROVEMENTS
DETAIL SHEET 1

CITY OF SUMMIT UNION CO., N.J.
DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
512 SPRINGFIELD AVENUE
SUMMIT, NJ 07901
UNION COUNTY

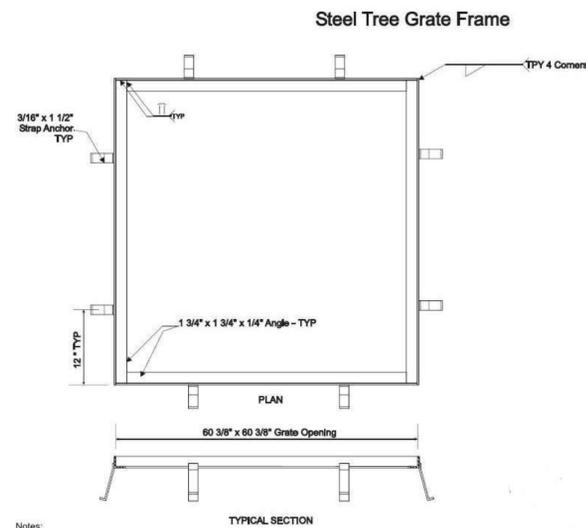
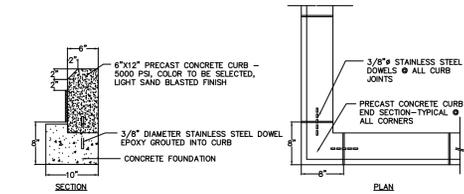
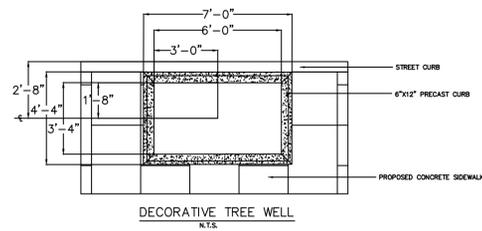
Aaron J. Schragar
Professional Engineer
New Jersey Lic. No. 46143
City Engineer



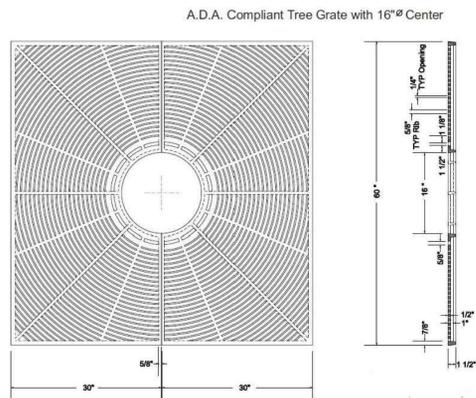
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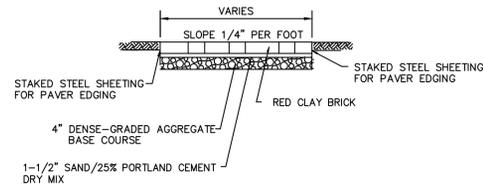
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Notes:
1. Material: Hot Rolled Steel ASTM A-36;

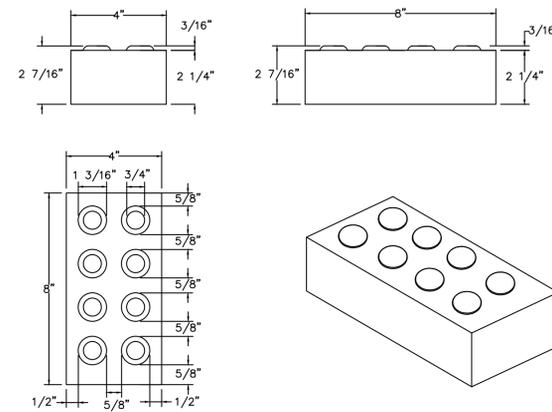


Notes:
1. Material: Gray Cast Iron, ASTM A48-83, Class 30B;
2. A.D.A. Compliant openings;
3. Castings supplied without surface coating;
4. Non-domestic manufacture.

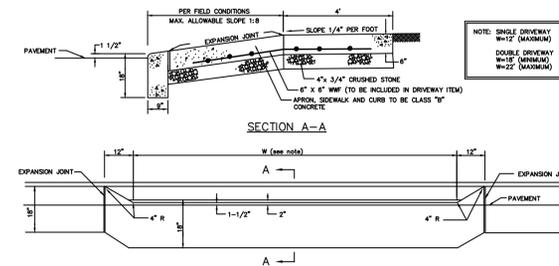
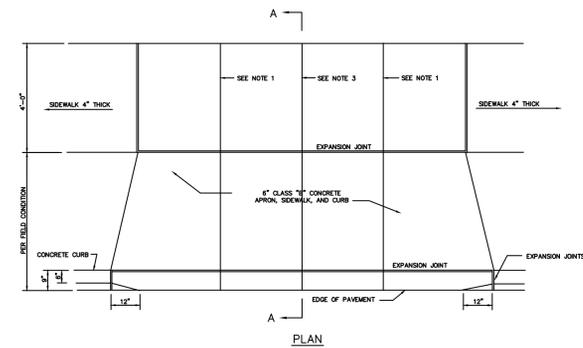
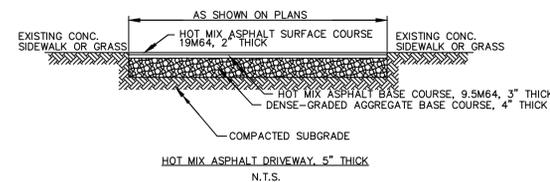
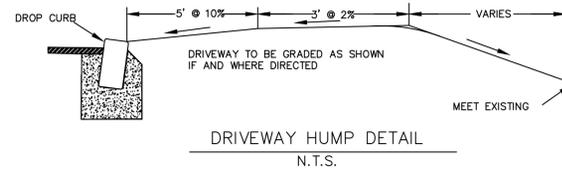


NOTE: LEAVE 3-1/4" FROM TOP OF SAND TO FINISH GRADE. PLACE BRICK, TAMP AND VIBRATE BLOCK TO FINISH GRADE. NO GROUT OR DRY MIX TO BE PLACED BETWEEN BLOCKS.

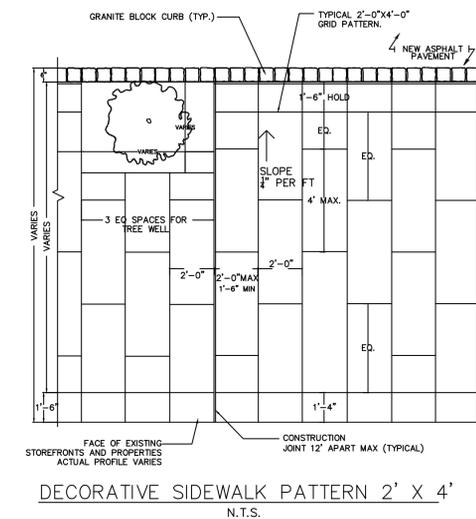
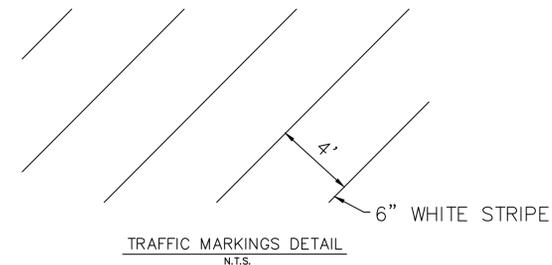
- RED CLAY BRICK SHALL BE COMMERCIAL GRADE MEETING US ASTM STANDARDS FOR STRENGTH AND SIZE. SAMPLES MUST BE SUBMITTED FOR APPROVAL PRIOR TO CONSTRUCTION.



ADA CURB RAMP DEMARICATION BRICKS DETAIL
N.T.S.



NOTES:
1. DOUBLE DRIVEWAY - CONTRACTION JOINT CONSTRUCTED WITH A 1/8" STEEL PLATE. SINGLE DRIVEWAY - BLIND JOINT 1/2" DEEP SURFACE GROOVE.
2. SURFACE IS TO BE COMPACTED IN A MANNER SUITABLE TO THE ENGINEER.
3. EXPANSION JOINTS ARE TO BE 1/2" WIDE AND FILLED WITH PREFORMED HOT MIX ASPHALT TYPE JOINT FILLER. THE TOP OF ALL JOINT FILLER SHALL BE 1/4" BELOW THE TOP OF THE SURFACE.
4. BLIND JOINTS ARE TO BE SURFACE GROOVE CUT INTO SIDEWALK 1/2" DEEP.
5. ALL CONCRETE SURFACES SHALL BE TREATED WITH A CONCRETE CURING AND SEALING COMPOUND.



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DOWNTOWN ROAD AND BEAUTIFICATION PROJECT
ROAD MILLING/PAVING AND IMPROVEMENTS
DETAIL SHEET 2

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DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
512 SPRINGFIELD AVENUE
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UNION COUNTY

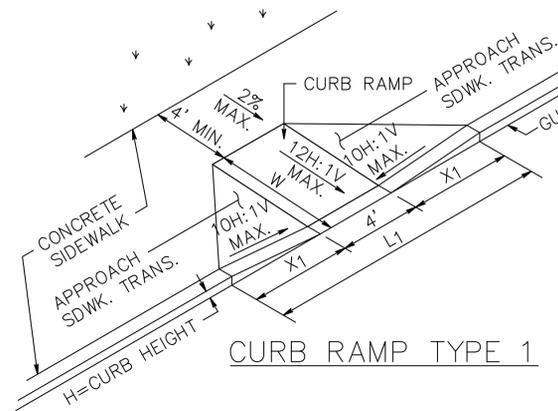
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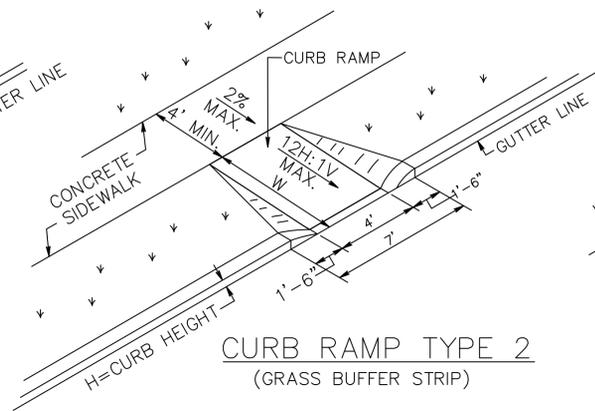
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BY: RM

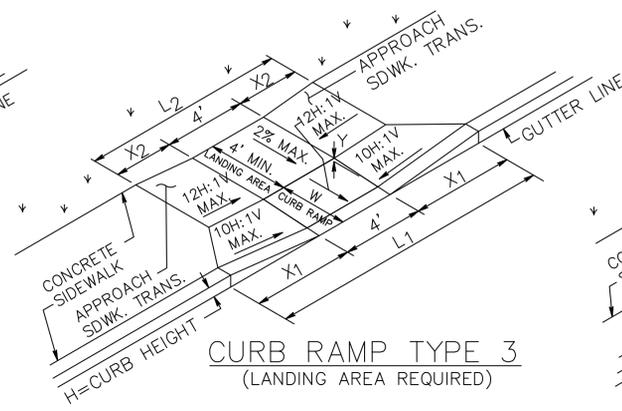
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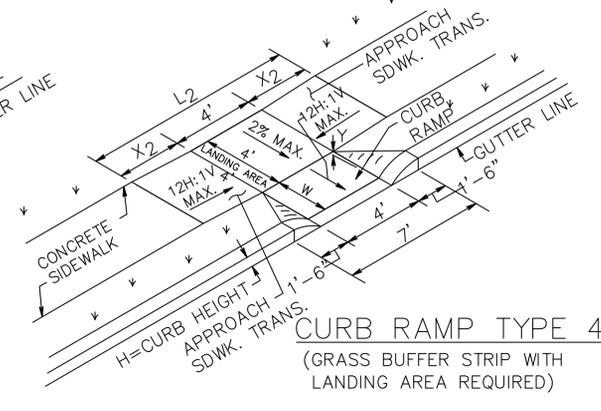
CURB RAMP TYPE 1



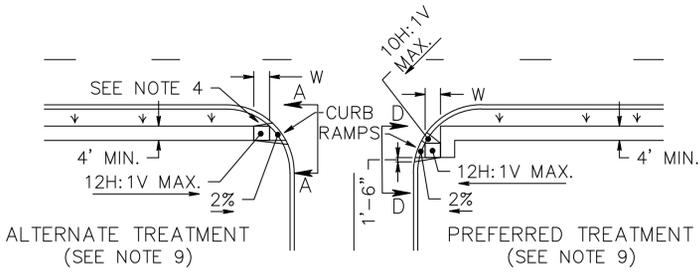
CURB RAMP TYPE 2
(GRASS BUFFER STRIP)



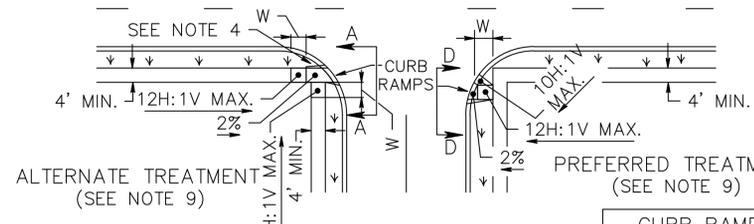
CURB RAMP TYPE 3
(LANDING AREA REQUIRED)



CURB RAMP TYPE 4
(GRASS BUFFER STRIP WITH LANDING AREA REQUIRED)

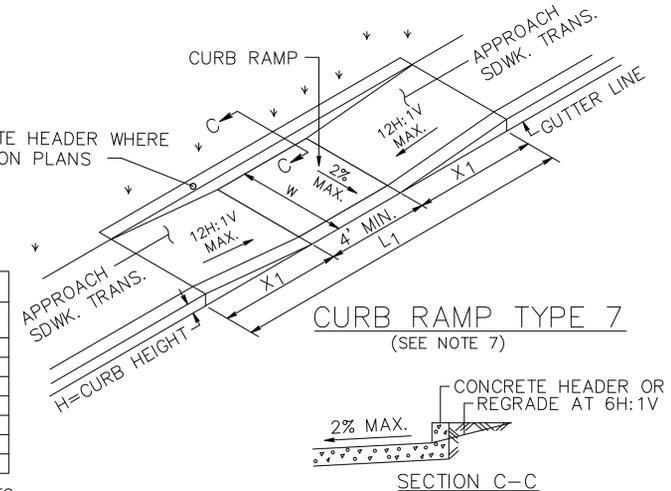


CURB RAMP TYPE 5
(CROSSING PARALLEL TO HIGHWAY ONLY)

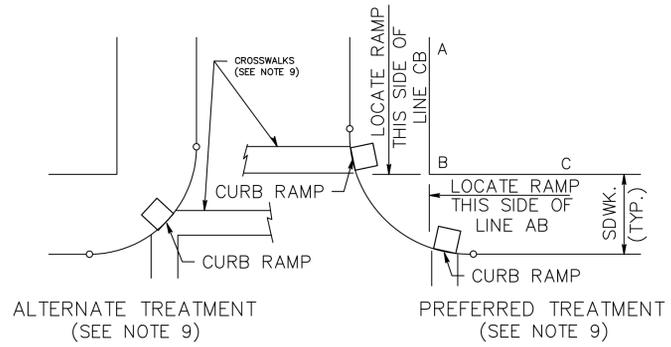


CURB RAMP TYPE 6
(CROSSING PARALLEL TO HIGHWAY ONLY)

CURB RAMP TYPE 7			
W FEET	H INCHES	X1 FEET	L1 FEET
4 MIN.	3	3	11
6 MAX.	4	4	13
	5	5	15
	6	6	17
	7	7	19
	8	8	21
	9	9	23



CURB RAMP TYPE 7
(SEE NOTE 7)



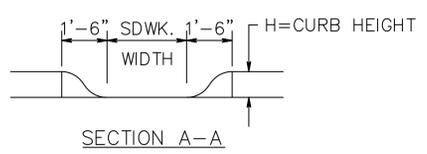
ALTERNATE TREATMENT (SEE NOTE 9)
PREFERRED TREATMENT (SEE NOTE 9)

LOCATION OF CURB RAMP TYPES 1, 2, 3, 4 & 7 FOR CROSSING PARALLEL AND PERPENDICULAR TO HIGHWAY

CURB RAMP TYPE 1			
H INCHES	X1 FEET	L1 FEET	W FEET
3	2.5	9.0	3
4	3.3	10.6	4
5	4.2	12.4	5
6	5.0	14.0	6
7	5.8	15.6	7
8	6.7	17.4	8
9	7.5	19.0	9

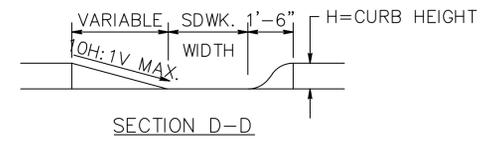
CURB RAMP TYPE 2, 5 OR 6	
H INCHES	W FEET
3	3
4	4
5	5
6	6
7	7
8	8
9	9

- GENERAL NOTES:
- LANDING AREA, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP SHALL BE KEPT CLEAR OF OBSTRUCTIONS.
 - DIMENSIONS SHOWN IN TABLES ARE FOR RELATIVELY FLAT SIDEWALK AREAS. CARE SHOULD BE TAKEN WHEN DETERMINING CURB RAMP SIZE BASED ON CURB HEIGHT (H) WHERE ELEVATION OF CURB AND SIDEWALK VARY DRASTICALLY IN AREA OF PROPOSED CURB RAMP.
 - CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
 - FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
 - SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES TO BE PAID FOR AS CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
 - CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES TO BE PAID FOR AS VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
 - WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, CURB RAMP TYPE 7 SHOULD BE USED, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
 - CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
 - PREFERRED AND ALTERNATE TREATMENTS SHOULD NOT BE INTERMIXED WITHIN THE SAME INTERSECTION.
 - DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.

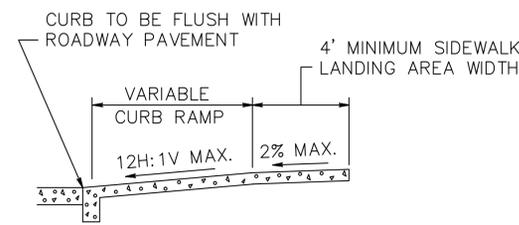


SECTION A-A

NOTE: CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).



SECTION D-D

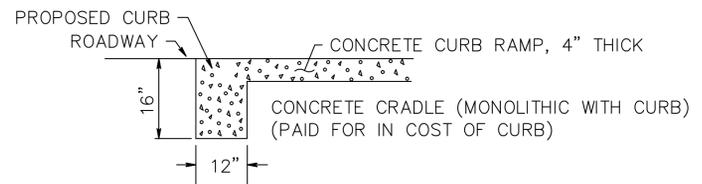


SECTION THROUGH CURB RAMPS 1 THROUGH 6

CURB RAMP TYPE 3						
W FEET	H INCHES	X1 FEET	L1 FEET	Y INCHES	X2 FEET	L2 FEET
2.5	3	2.5	9	2.5	0.5	5
	4	3.3	10.6	2.5	1.5	7
	5	4.2	12.4	2.5	2.5	9
	6	5.0	14.0	2.5	3.5	11
	7	5.8	15.6	2.5	4.5	13
	8	6.7	17.4	2.5	5.5	15
3.0	3	*	*	*	*	*
	4	3.3	10.6	3.0	1	6
	5	4.2	12.4	3.0	2	8
	6	5.0	14.0	3.0	3	10
	7	5.8	15.6	3.0	4	12
	8	6.7	17.4	3.0	5	14
3.5	3	*	*	*	*	*
	4	3.3	10.6	3.5	0.5	5
	5	4.2	12.4	3.5	1.5	7
	6	5.0	14.0	3.5	2.5	9
	7	5.8	15.6	3.5	3.5	11
	8	6.7	17.4	3.5	4.5	13
4.0	3	*	*	*	*	*
	4	*	*	*	*	*
	5	4.2	12.4	4.0	1	6
	6	5.0	14.0	4.0	2	8
	7	5.8	15.6	4.0	3	10
	8	6.7	17.4	4.0	4	12
9	7.5	19.0	4.0	5	14	

CURB RAMP TYPE 4				
W FEET	H INCHES	Y INCHES	X2 FEET	L2 FEET
2.5	3	2.5	0.5	5
	4	2.5	1.5	7
	5	2.5	2.5	9
	6	2.5	3.5	11
	7	2.5	4.5	13
	8	2.5	5.5	15
3.0	3	**	**	**
	4	3.0	1	6
	5	3.0	2	8
	6	3.0	3	10
	7	3.0	4	12
	8	3.0	5	14
3.5	3	**	**	**
	4	3.5	0.5	5
	5	3.5	1.5	7
	6	3.5	2.5	9
	7	3.5	3.5	11
	8	3.5	4.5	13
4.0	3	**	**	**
	4	**	**	**
	5	4.0	1	6
	6	4.0	2	8
	7	4.0	3	10
	8	4.0	4	12
9	4.0	5	14	

* TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1.
** TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2.



DROPPED CURB AND CRADLE

NO.	DATE	REVISIONS	DESCRIPTION

DOWNTOWN ROAD AND BEAUTIFICATION PROJECT
ROAD MILLING/PAVING AND IMPROVEMENTS
DETAIL SHEET 3

CITY OF SUMMIT UNION CO., N.J.
DIVISION OF ENGINEERING
DEPARTMENT OF COMMUNITY SERVICES
25 SPRINGFIELD AVENUE
SUMMIT, NJ 07901
UNION COUNTY

Aaron J. Schragger
Professional Engineer
New Jersey Lic. No. 46143
City Engineer



DATE:
4/1/2015

DRAWN
BY: RM

SCALE
AS NOTED

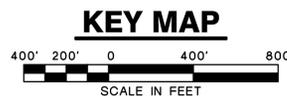
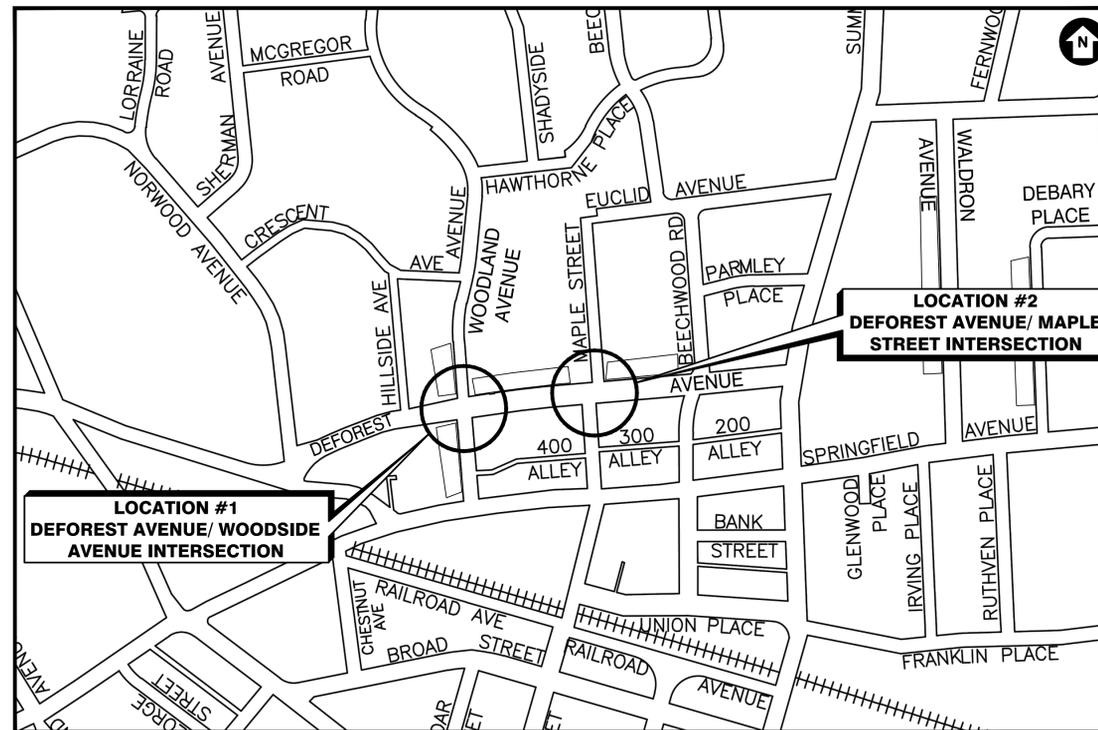
ADDITION TO DEFOREST AVENUE IMPROVEMENT PROJECT — TRAFFIC SIGNALS —

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE SUMMIT POLICE DEPARTMENT 72 HOURS PRIOR TO THE START OF ANY WORK AND SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITHIN 30 DAYS OF THE DAY THE PROJECT IS AWARDED TO CONTRACTOR.
2. NO SEPARATE PAYMENT SHALL BE MADE FOR FLAGGERS. ALL COSTS FOR FLAGGERS SHALL BE INCLUDED IN VARIOUS ITEMS IN THE BID PROPOSAL.
3. ALLOWABLE HOURS OF WORK ARE 8:00 AM TO 4:30 PM. THE CONTRACTOR SHALL MAKE PROVISIONS FOR MATERIAL AND EQUIPMENT STORAGE. THE CONTRACTOR SHALL COORDINATE THE STORAGE OF MATERIAL AND EQUIPMENT WITH THE ENGINEER AND THE POLICE DEPARTMENT. ALL COSTS FOR MATERIAL AND EQUIPMENT STORAGE SHALL BE INCLUDED IN THE BID ITEM "PARKING AND MATERIAL STORAGE".
4. ALL TRAFFIC CONTROL AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. AND MUNICIPAL TRAFFIC ORDINANCES. THE CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO THE POLICE DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE START OF WORK. TRAFFIC CONTROL PLANS SHALL INCLUDE AT A MINIMUM, THE FOLLOWING SITUATIONS: 1) ROAD CLOSED, 2) LANE CLOSED, 3) SHOULDER CLOSED. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL ON THE PROJECT. ANY COSTS ASSOCIATED WITH TRAFFIC CONTROL SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE PROJECT.
5. CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ALL UTILITIES TO RAISE OR LOWER MANHOLES, METERS, VALVES, ETC. TO GRADE AS WORK PROGRESSES. ALL COSTS FOR COORDINATION WITH UTILITY COMPANIES SHALL BE INCLUDED IN THE BID ITEM "UTILITY COORDINATION" IN THE PROJECT. THE LOCATIONS OF SUBSURFACE UTILITIES ARE APPROXIMATE AND ARE SHOWN FOR ILLUSTRATIVE PURPOSES. THE CONTRACTOR IS RESPONSIBLE TO CALL FOR A MARK OUT OF UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY DAMAGED CONCRETE BEFORE ACCEPTANCE OF THE PROJECT BY THE CITY AT NO ADDITIONAL COST.
7. THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL TREES WITHIN THE PROJECT DURING CONSTRUCTION. DAMAGE TO EXISTING TREES WILL BE EVALUATED BY THE CITY FORESTER. THE PROJECT SPECIFICATIONS IMPOSES A PENALTY OF \$500 PER INCIDENT OF DAMAGE TO ANY TREE. ALL COSTS RELATED TO TREE PROTECTION ARE TO BE INCLUDED IN THE BID ITEM "MOBILIZATION".
8. NO SEPARATE PAYMENT SHALL BE MADE FOR ANY SAW CUTTING REQUIRED ON THE PROJECT. COSTS FOR SAW CUTTING SHALL BE INCLUDED IN THE VARIOUS ITEMS IN THE BID PROPOSAL.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE STAKEOUT AND LAYOUT OF THE PROJECT. THE STAKEOUT AND LAYOUT IS TO BE PERFORMED BY A NEW JERSEY PROFESSIONAL LAND SURVEYOR. ALL COSTS ASSOCIATED WITH THE STAKEOUT AND LAYOUT OF THE PROJECT ARE TO BE INCLUDED IN THE BID ITEM "CONSTRUCTION LAYOUT". ALL GRADES ARE TO BE SET IN THE FIELD BY THE LAND SURVEYOR. THE CONTRACTOR IS TO SUBMIT TO THE ENGINEER A PROFILE WITH THE SET GRADES PRIOR TO THE BEGINNING OF CONSTRUCTION. THE PROFILE IS SUBJECT TO THE APPROVAL OF THE ENGINEER.
10. SHOP DRAWINGS IF ANY ARE TO BE SUBMITTED AT A MINIMUM OF THREE (3) WEEKS PRIOR TO CONSTRUCTION FOR ALL PROPOSED DRAINAGE STRUCTURES. ALL DRAINAGE STRUCTURES MUST BE DESIGNED BY A NEW JERSEY PROFESSIONAL ENGINEER. ALL SHOP DRAWINGS ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.
11. SITE SURVEY PROVIDED BY HATCH MOTT MCDONALD, 908-703-6000 AND HAROLD E. PELLOW & ASSOCIATES, INC., 973-948-6463.
12. ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION FOR THE IMPROVEMENTS SHOWN SHALL BE IN ACCORDANCE WITH THE NEW JERSEY DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2007" AND ALL APPLICABLE AMENDMENTS.

CITY OF SUMMIT
SCALES AS INDICATED

UNION COUNTY
JULY 2015



STD. ITEM NO.	ESTIMATE OF QUANTITIES	QUANTITY	UNIT
1	2" RIGID METALLIC CONDUIT, TYPE CUR (SERVICE)	120	LIN. FT.
2	4" RIGID NON METALLIC CONDUIT, TYPE CUR (SCH. 80 PVC)	1,050	LIN. FT.
3	FOUNDATIONS, TYPE SFK	8	UNIT
4	FOUNDATIONS, TYPE SPF	4	UNIT
5	FOUNDATIONS, TYPE P-MC	2	UNIT
6	18"x36" JUNCTION BOX	9	UNIT
7	METER CABINET, TYPE TL	2	UNIT
8	CONTROLLER ASSEMBLY, 8 PHASE WITH BATTERY BACKUP	2	UNIT
9	UC-SMA15-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	4	UNIT
10	UC-SMA20-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	3	UNIT
11	UC-SMA25-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	1	UNIT
12	TRAFFIC SIGNAL HEAD	24	UNIT
13	PEDESTRIAN SIGNAL STANDARD	4	UNIT
14	PEDESTRIAN SIGNAL HEAD (COUNTDOWN)	16	UNIT
15	PUSH BUTTON ASSEMBLY, w/R10-3e SIGN	8	UNIT
16	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	3,100	LIN. FT.
17	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	1,600	LIN. FT.
18	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	800	LIN. FT.
19	GROUND WIRE, NO. 8 AWG	800	LIN. FT.
20	SERVICE WIRE, NO. 6 AWG	200	LIN. FT.
21	IMAGE DETECTION ASSEMBLY	4	UNIT
22	IMAGE DETECTION CABLE	600	LIN. FT.
23	CONTROLLER TURN ON	2	UNIT
24	SIGNS	8	UNIT

Funding Note:
This project is funded by the City of Summit and NJDOT Municipal Aid Grant.

Survey Note:
The contractor is responsible for stakeout and vertical control of the project. Stakeout is required for the project. AutoCAD drawings are available for this project upon request. Cut sheets shall be submitted prior to the start of any work.

Project Safety Note:
The contractor(s) working on the project are responsible to ensure that all safety regulations of the Occupational Safety and Health Administration (OSHA) and the requirements of the State of New Jersey Department of Labor and Industry shall be adhered to on this project and that he or she shall instruct his or her personnel to follow these regulations. These regulations include, but are not limited to, the regulations concerning Trench Excavation, Competent Persons and Confined Space Regulations.

Specifications Note:
New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction 2007 and all of its amendments and Baseline Document Changes are to govern all construction here in.

UTILITIES

Public Service Electric & Gas Co.
48 Middle Avenue
Summit, NJ 07901

Verizon
445 Georges Road
North Brunswick, NJ 08902

Jersey Central Power and Light
300 Madison Avenue
Morristown, NJ 07960

City of Summit
Division of Public Works
41 Chatham Road
Summit, NJ 07901

Comcast Cablevision of New Jersey
300 Rahway Avenue 07901
Union, NJ 07083

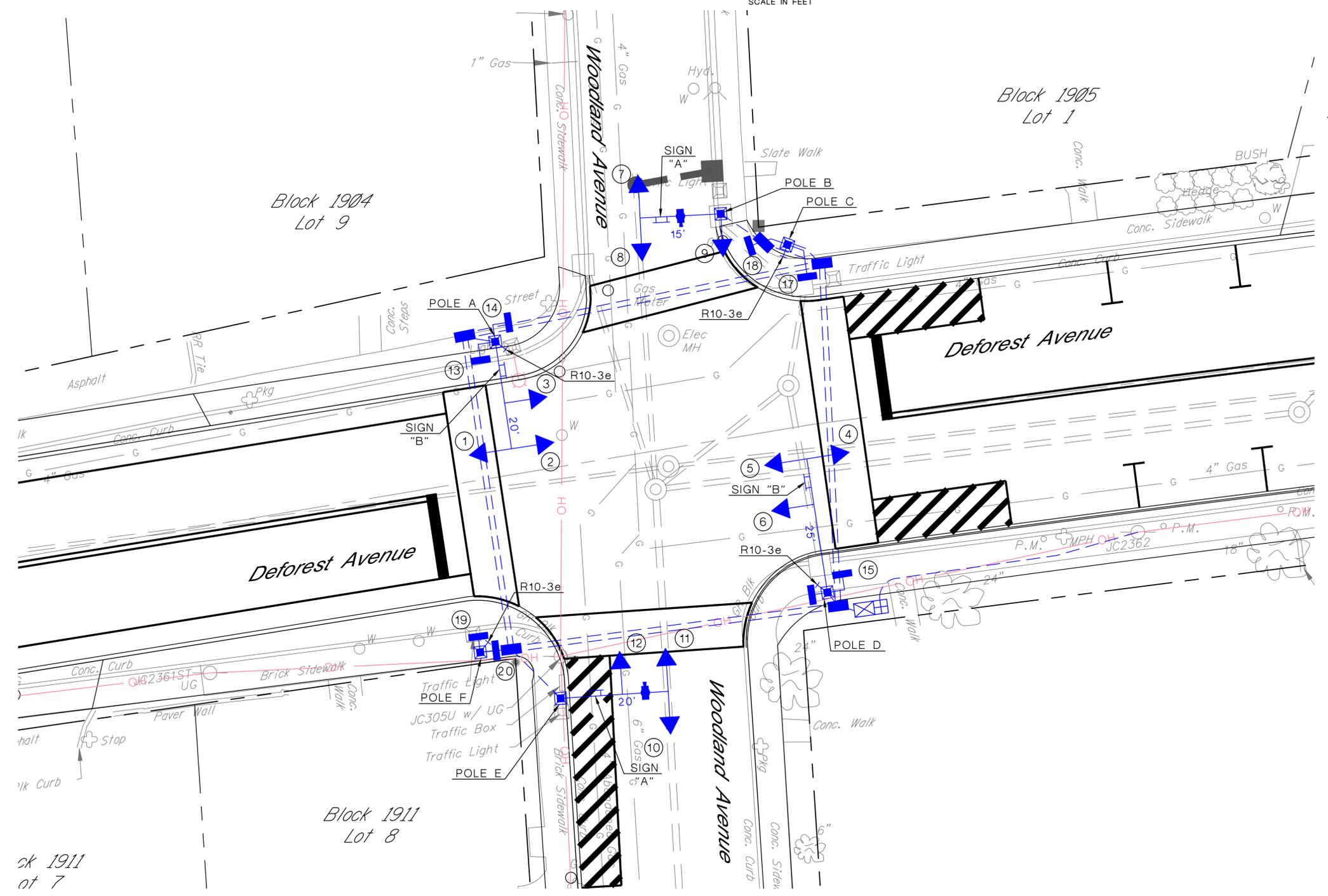
New Jersey American Water Co.
167 JFK Parkway
Short Hills, NJ 07078

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INDEX OF SHEETS	
NO.	DESCRIPTION
1	KEY MAP & QUANTITIES
2	TRAFFIC SIGNAL PLAN - DEFOREST AVENUE/WOODSIDE AVENUE
3	ELECTRICAL PLAN - DEFOREST AVENUE/WOODSIDE AVENUE
4	TRAFFIC SIGNAL PLAN - DEFOREST AVENUE/MAPLE STREET
5	ELECTRICAL PLAN - DEFOREST AVENUE/MAPLE STREET
6-14	CONSTRUCTION DETAILS

TRAFFIC SIGNALS

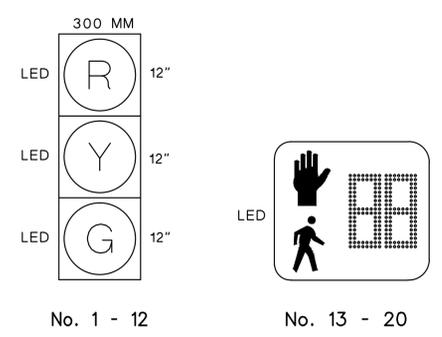
INTERSECTION IMPROVEMENTS PROJECT FOR DEFOREST AVENUE CITY OF SUMMIT - UNION COUNTY - NEW JERSEY			
KEY MAP & QUANTITIES			
	HAROLD E. PELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 24G427955000 CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07822 PH: (973) 948-6463 FAX: (973) 948-2916	DRAWN BY: R.R.C./R.J.D. CHECKED BY: C.L.S. FIELD BOOK: N/A FILE No.: 13-054	DATE: JULY 2015 SCALE: 1" = 400' SHEET No. 1 of 14
CORY L. STONER, P.E. PROFESSIONAL ENGINEER N.J. LIC. No. 41027			
DATE _____			



SIGN LEGEND



SIGNAL LEGEND



**DEFOREST AVENUE/
WOODLAND AVENUE**

INTERSECTION IMPROVEMENTS PROJECT
FOR
DEFOREST AVENUE
CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

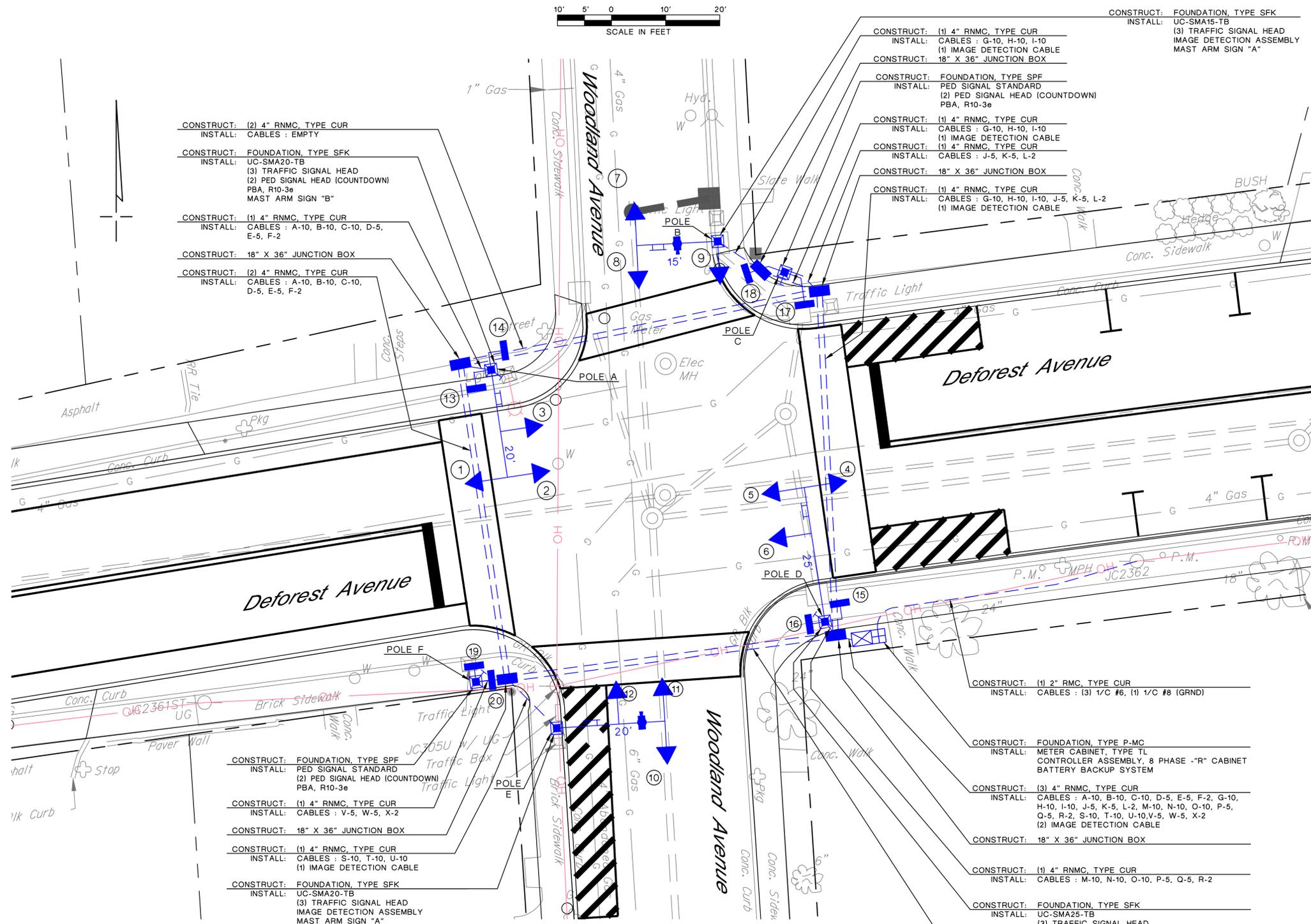
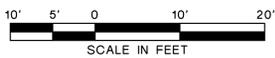
TRAFFIC SIGNAL PLAN

HPA	HAROLD E. FELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 240A27669000 CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph: (973) 948-6400 fax: (973) 948-2916	DRAWN BY: R.R.C./R.J.D. CHECKED BY: C.L.S. FIELD BOOK: N/A FILE No. 13-054	DATE: MAY 2015 SCALE: 1" = 10' SHEET No. 2 of 14
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CORY L. STONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. No. 41027

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July 23, 2015 - 4:02 PM J:\Projects\Union County\City of Summit\DeForest Avenue Traffic Signals\DeForest Avenue Traffic Signals\Electrical Plans\13054-20-010.dwg (Revised) HAROLD E. FELLOW & ASSOCIATES, INC.



CONSTRUCT: (2) 4" RNMC, TYPE CUR
INSTALL: CABLES : EMPTY

CONSTRUCT: FOUNDATION, TYPE SFK
INSTALL: UC-SMA20-TB
(3) TRAFFIC SIGNAL HEAD
(2) PED SIGNAL HEAD (COUNTDOWN)
PBA, R10-3e
MAST ARM SIGN "B"

CONSTRUCT: (1) 4" RNMC, TYPE CUR
INSTALL: CABLES : A-10, B-10, C-10, D-5, E-5, F-2

CONSTRUCT: 18" X 36" JUNCTION BOX

CONSTRUCT: (2) 4" RNMC, TYPE CUR
INSTALL: CABLES : A-10, B-10, C-10, D-5, E-5, F-2

CONSTRUCT: (1) 4" RNMC, TYPE CUR
INSTALL: CABLES : G-10, H-10, I-10
(1) IMAGE DETECTION CABLE

CONSTRUCT: FOUNDATION, TYPE SPF
INSTALL: PED SIGNAL STANDARD
(2) PED SIGNAL HEAD (COUNTDOWN)
PBA, R10-3e

CONSTRUCT: (1) 4" RNMC, TYPE CUR
INSTALL: CABLES : G-10, H-10, I-10
(1) IMAGE DETECTION CABLE

CONSTRUCT: 18" X 36" JUNCTION BOX

CONSTRUCT: (1) 4" RNMC, TYPE CUR
INSTALL: CABLES : G-10, H-10, I-10, J-5, K-5, L-2
(1) IMAGE DETECTION CABLE

CONSTRUCT: FOUNDATION, TYPE SFK
INSTALL: UC-SMA15-TB
(3) TRAFFIC SIGNAL HEAD
IMAGE DETECTION ASSEMBLY
MAST ARM SIGN "A"

CONSTRUCT: FOUNDATION, TYPE SPF
INSTALL: PED SIGNAL STANDARD
(2) PED SIGNAL HEAD (COUNTDOWN)
PBA, R10-3e

CONSTRUCT: (1) 4" RNMC, TYPE CUR
INSTALL: CABLES : V-5, W-5, X-2

CONSTRUCT: 18" X 36" JUNCTION BOX

CONSTRUCT: (1) 4" RNMC, TYPE CUR
INSTALL: CABLES : S-10, T-10, U-10
(1) IMAGE DETECTION CABLE

CONSTRUCT: FOUNDATION, TYPE SFK
INSTALL: UC-SMA20-TB
(3) TRAFFIC SIGNAL HEAD
IMAGE DETECTION ASSEMBLY
MAST ARM SIGN "A"

CONSTRUCT: (1) 2" RMC, TYPE CUR
INSTALL: CABLES : (3) 1/2" #6, (1) 1/2" #8 (GRND)

CONSTRUCT: FOUNDATION, TYPE P-MC
INSTALL: METER CABINET, TYPE TL
CONTROLLER ASSEMBLY, 8 PHASE "R" CABINET
BATTERY BACKUP SYSTEM

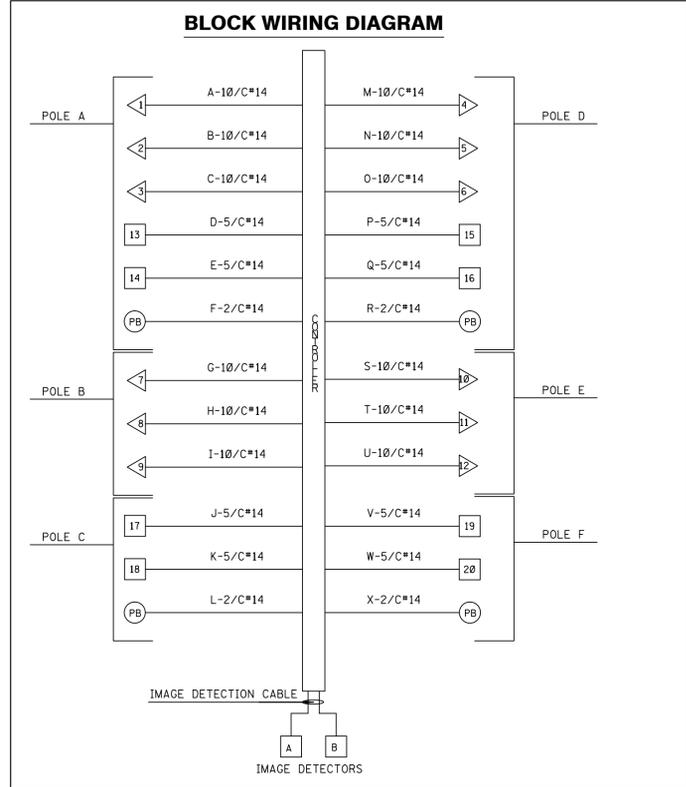
CONSTRUCT: (3) 4" RNMC, TYPE CUR
INSTALL: CABLES : A-10, B-10, C-10, D-5, E-5, F-2, G-10, H-10, I-10, J-5, K-5, L-2, M-10, N-10, O-10, P-5, Q-5, R-2, S-10, T-10, U-10, V-5, W-5, X-2
(2) IMAGE DETECTION CABLE

CONSTRUCT: 18" X 36" JUNCTION BOX

CONSTRUCT: (1) 4" RNMC, TYPE CUR
INSTALL: CABLES : M-10, N-10, O-10, P-5, Q-5, R-2

CONSTRUCT: FOUNDATION, TYPE SFK
INSTALL: UC-SMA25-TB
(3) TRAFFIC SIGNAL HEAD
(2) PED SIGNAL HEAD (COUNTDOWN)
PBA, R10-3e
MAST ARM SIGN "B"

CONSTRUCT: (2) 4" RNMC, TYPE CUR
INSTALL: CABLES : A-10, B-10, C-10, D-5, E-5, F-2, S-10, T-10, U-10, V-5, W-5, X-2
(1) IMAGE DETECTION CABLE



70 SECOND CYCLE (WITHOUT PEDESTRIAN ACTUATION)

PHASE	SIGNAL FACES				TIME
	1 - 6	7 - 12	13,15,17,19	14,16,18,20	
A. DEFOREST AVENUE	G	R	DW	W	10
PEDESTRIAN CLEARANCE	G	R	DW	FDW	15
CHANGE	Y	R	DW	DW	3
CLEARANCE	R	R	DW	DW	3
B. WOODLAND AVENUE	R	G	W	DW	23
CHANGE	R	Y	DW	DW	3
CLEARANCE	R	R	DW	DW	3

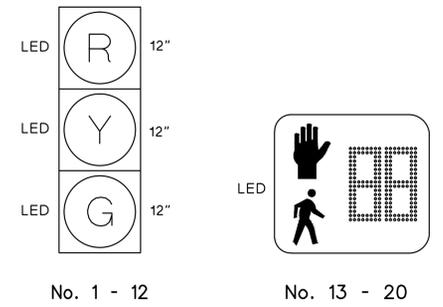
70 SECOND CYCLE (WITH PEDESTRIAN ACTUATION)

PHASE	SIGNAL FACES				TIME
	1 - 6	7 - 12	13,15,17,19	14,16,18,20	
A. DEFOREST AVENUE	G	R	DW	W	10
PEDESTRIAN CLEARANCE	G	R	DW	FDW	15
CHANGE	Y	R	DW	DW	3
CLEARANCE	R	R	DW	DW	3
B. WOODLAND AVENUE	R	G	W	DW	10
PEDESTRIAN CLEARANCE	R	G	FDW	DW	13
CHANGE	R	Y	DW	DW	3
CLEARANCE	R	R	DW	DW	3
EMERGENCY FLASH	Y	R	DARK	DARK	-

- MEMORY IS TO BE DISCONNECTED.
- THE VEHICLE EXTENSION IS TO BE 2 SECONDS.
- THE MANUAL CONTROL IS TO REMAIN CONNECTED.

S TD. ITEM NO.	TO BE CONSTRUCTED	QUANTITY	UNIT
1	2" RIGID METALLIC CONDUIT, TYPE CUR (SERVICE)	60	LIN. FT.
2	4" RIGID NON METALLIC CONDUIT, TYPE CUR (SCH. 80 PVC)	550	LIN. FT.
3	FOUNDATIONS, TYPE SFK	4	UNIT
4	FOUNDATIONS, TYPE SPF	2	UNIT
5	FOUNDATIONS, TYPE P-MC	1	UNIT
6	18" X 36" JUNCTION BOX	5	UNIT
7	METER CABINET, TYPE TL	1	UNIT
8	CONTROLLER ASSEMBLY, 8 PHASE WITH BATTERY BACKUP	1	UNIT
9	UC-SMA15-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	2	UNIT
10	UC-SMA20-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	1	UNIT
11	UC-SMA25-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	1	UNIT
12	TRAFFIC SIGNAL HEAD	12	UNIT
13	PEDESTRIAN SIGNAL STANDARD	2	UNIT
14	PEDESTRIAN SIGNAL HEAD (COUNTDOWN)	2	UNIT
15	PUSH BUTTON ASSEMBLY, w/R10-3e SIGN	4	UNIT
16	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	1,800	LIN. FT.
17	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	800	LIN. FT.
18	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	400	LIN. FT.
19	GROUND WIRE, NO. 8 AWG	400	LIN. FT.
20	SERVICE WIRE, NO. 8 AWG	100	LIN. FT.
21	IMAGE DETECTION ASSEMBLY	2	UNIT
22	IMAGE DETECTION CABLE	300	LIN. FT.
23	CONTROLLER TURN ON	1	UNIT
24	SIGNS	4	UNIT

SIGNAL LEGEND



- NOTES:
1. THE EXISTING TRAFFIC SIGNALS SHALL REMAIN IN SERVICE UNTIL THE NEW SIGNAL IS OPERATIONAL.
 2. CURRENT NJDOT STANDARD ELECTRICAL DETAILS AND SPECIFICATIONS SHALL APPLY.
 3. LOCATION OF ALL FOUNDATIONS, JUNCTION BOXES AND CONDUIT ARE SUBJECT TO CHANGE DEPENDING ON LOCATION OF UTILITIES AS MARKED OUT PRIOR TO THE START OF CONSTRUCTION.

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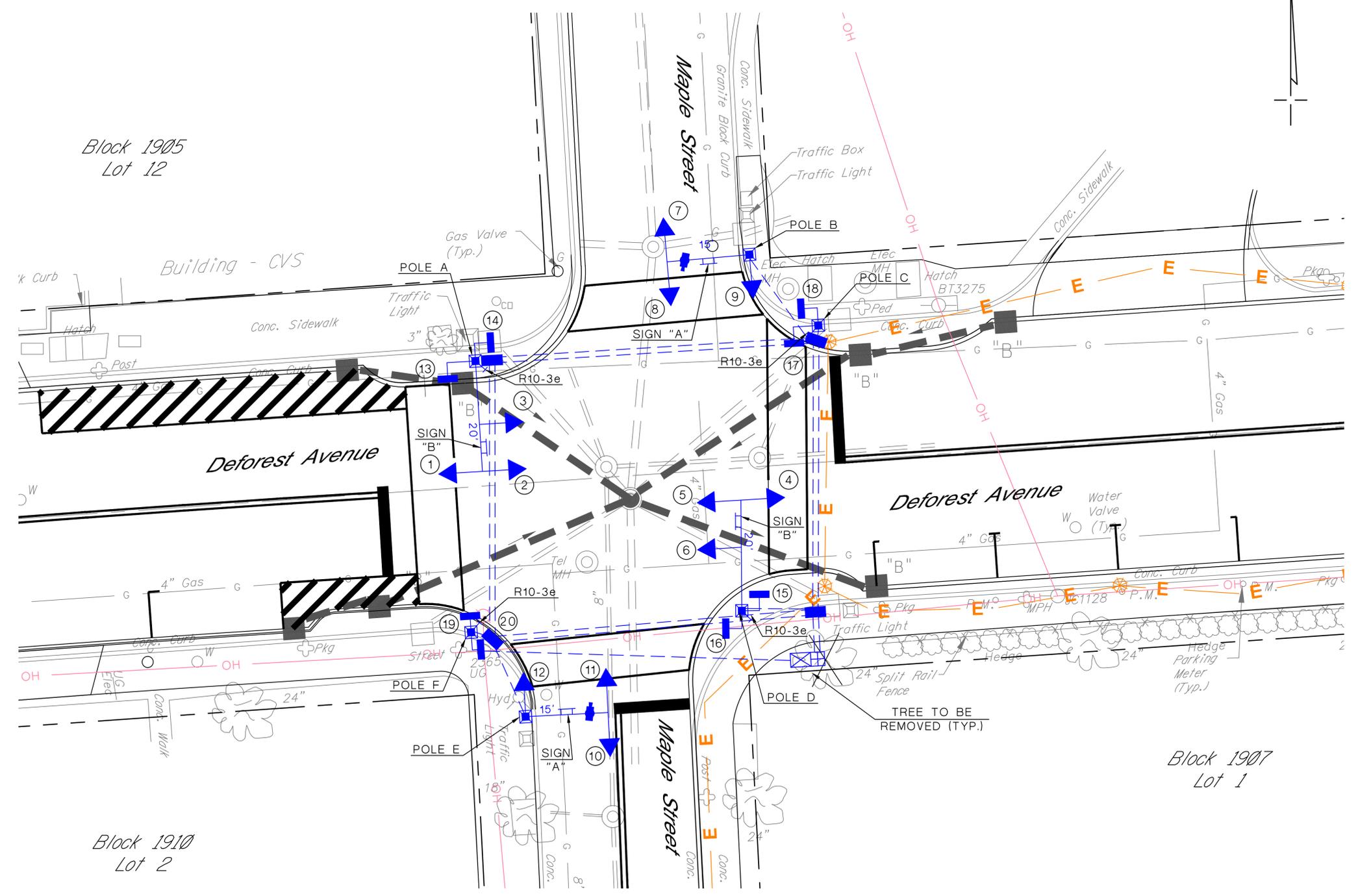
**DEFOREST AVENUE/
WOODLAND AVENUE**

INTERSECTION IMPROVEMENTS PROJECT
FOR
DEFOREST AVENUE
CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

ELECTRICAL PLAN

HAROLD E. FELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 240A27569000 CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph: (973) 949-6493 fax: (973) 949-2916	DRAWN BY: R.R.C./R.J.D. CHECKED BY: C.L.S. FIELD BOOK: N/A FILE No. 13-054	DATE: MAY 2015 SCALE: 1" = 10' SHEET No. 3 of 14
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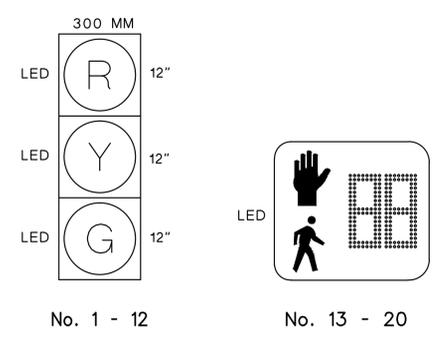
CORY L. STONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. No. 41027



SIGN LEGEND



SIGNAL LEGEND



**DEFOREST AVENUE/
MAPLE STREET**

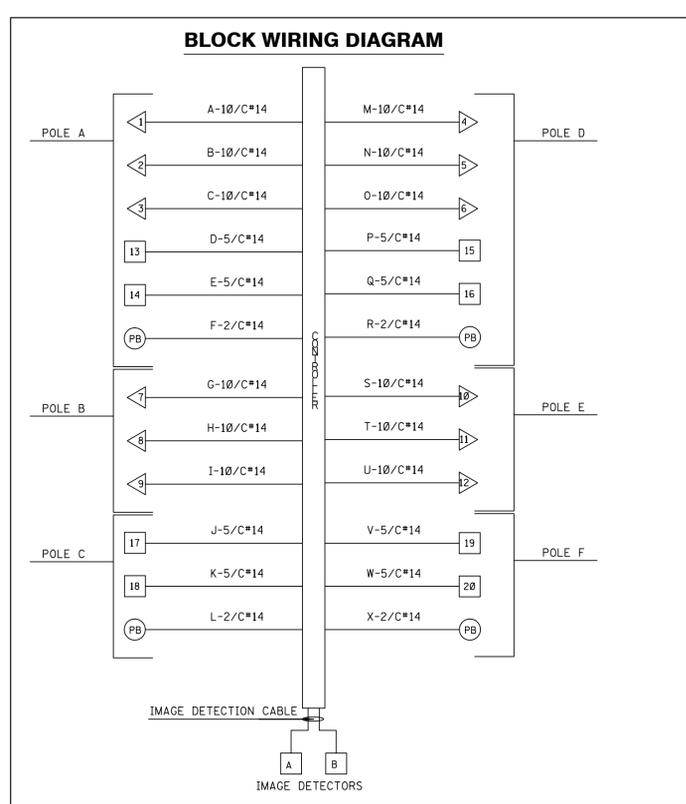
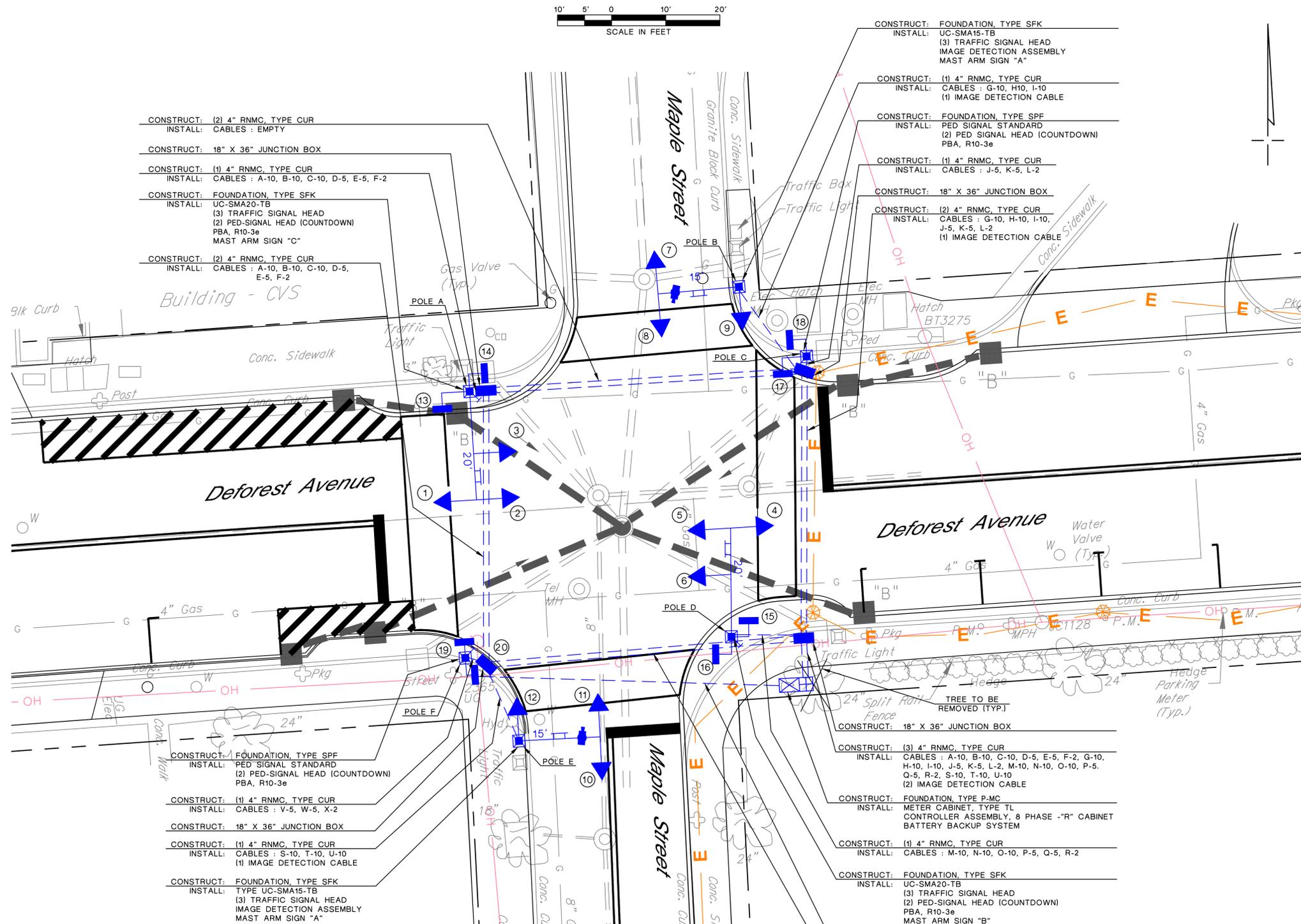
INTERSECTION IMPROVEMENTS PROJECT
FOR
DEFOREST AVENUE
CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

TRAFFIC SIGNAL PLAN

	<small>HAROLD E. FELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 240A27969000 CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph. (973) 948-6483 fax. (973) 948-2916</small>	<small>DRAWN BY: R.R.C./R.J.D. CHECKED BY: C.L.S. FIELD BOOK: N/A FILE No. 13-054</small>	<small>DATE: MAY 2015 SCALE: 1" = 10' SHEET No. 4 of 14</small>
	<p>CORY L. STONER, P.E. PROFESSIONAL ENGINEER N.J. LIC. No. 41027</p>		

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July 23, 2015 - 4:02 PM J:\Projects\Union County\City of Summit\DeForest Avenue Traffic Signals\Electrical Plans\13054-20-010.dwg (Reference) HAROLD E. FELLOW & ASSOCIATES, INC.



70 SECOND CYCLE (WITHOUT PEDESTRIAN ACTUATION)

PHASE	SIGNAL FACES				TIME
	1 - 6	7 - 12	13,15,17,19	14,16,18,20	
A. DEFOREST AVENUE	G	R	DW	W	10
PEDESTRIAN CLEARANCE	G	R	DW	FDW	15
CHANGE	Y	R	DW	DW	3
CLEARANCE	R	R	DW	DW	3
B. MAPLE STREET	R	G	W	DW	23
CHANGE	R	Y	DW	DW	3
CLEARANCE	R	R	DW	DW	3

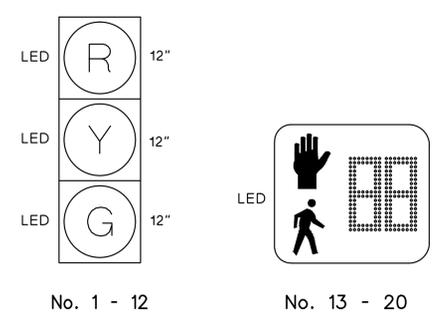
70 SECOND CYCLE (WITH PEDESTRIAN ACTUATION)

PHASE	SIGNAL FACES				TIME
	1 - 6	7 - 12	13,15,17,19	14,16,18,20	
A. DEFOREST AVENUE	G	R	DW	W	10
PEDESTRIAN CLEARANCE	G	R	DW	FDW	15
CHANGE	Y	R	DW	DW	3
CLEARANCE	R	R	DW	DW	3
B. MAPLE STREET	R	G	W	DW	10
PEDESTRIAN CLEARANCE	R	G	FDW	DW	13
CHANGE	R	Y	DW	DW	3
CLEARANCE	R	R	DW	DW	3
EMERGENCY FLASH	Y	R	DARK	DARK	-

• MEMORY IS TO BE DISCONNECTED.
 • THE VEHICLE EXTENSION IS TO BE 2 SECONDS.
 • THE MANUAL CONTROL IS TO REMAIN CONNECTED.

STD. ITEM NO.	TO BE CONSTRUCTED	QUANTITY	UNIT
1	2" RIGID METALLIC CONDUIT, TYPE CUR (SERVICE)	60	LN. FT.
2	4" RIGID NON METALLIC CONDUIT, TYPE CUR (SCH. 80 PVC)	500	LN. FT.
3	FOUNDATIONS, TYPE SFK	4	UNIT
4	FOUNDATIONS, TYPE SPF	2	UNIT
5	FOUNDATIONS, TYPE P-MC	1	UNIT
6	18"x36" JUNCTION BOX	4	UNIT
7	METER CABINET, TYPE TL	1	UNIT
8	CONTROLLER ASSEMBLY, 8 PHASE WITH BATTERY BACKUP	1	UNIT
9	UC-SMA15-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	2	UNIT
10	UC-SMA20-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	2	UNIT
11	UC-SMA25-TB SINGLE MEMBER ARM & SHAFT ASSEMBLY	-	UNIT
12	TRAFFIC SIGNAL HEAD	12	UNIT
13	PEDESTRIAN SIGNAL STANDARD	2	UNIT
14	PEDESTRIAN SIGNAL HEAD (COUNTDOWN)	8	UNIT
15	PUSH BUTTON ASSEMBLY, w/R10-3e SIGN	4	UNIT
16	TRAFFIC SIGNAL CABLE, 10 CONDUCTOR	1,500	LN. FT.
17	TRAFFIC SIGNAL CABLE, 5 CONDUCTOR	800	LN. FT.
18	TRAFFIC SIGNAL CABLE, 2 CONDUCTOR	400	LN. FT.
19	GROUND WIRE, NO. 8 AWG	400	LN. FT.
20	SERVICE WIRE, NO. 6 AWG	100	LN. FT.
21	IMAGE DETECTION ASSEMBLY	2	UNIT
22	IMAGE DETECTION CABLE	300	LN. FT.
23	CONTROLLER TURN ON	1	UNIT
24	SIGNS	4	UNIT

SIGNAL LEGEND



- NOTES:
- THE EXISTING TRAFFIC SIGNALS SHALL REMAIN IN SERVICE UNTIL THE NEW SIGNAL IS OPERATIONAL.
 - CURRENT NJDOT STANDARD ELECTRICAL DETAILS AND SPECIFICATIONS SHALL APPLY.
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**DEFOREST AVENUE/
MAPLE STREET**

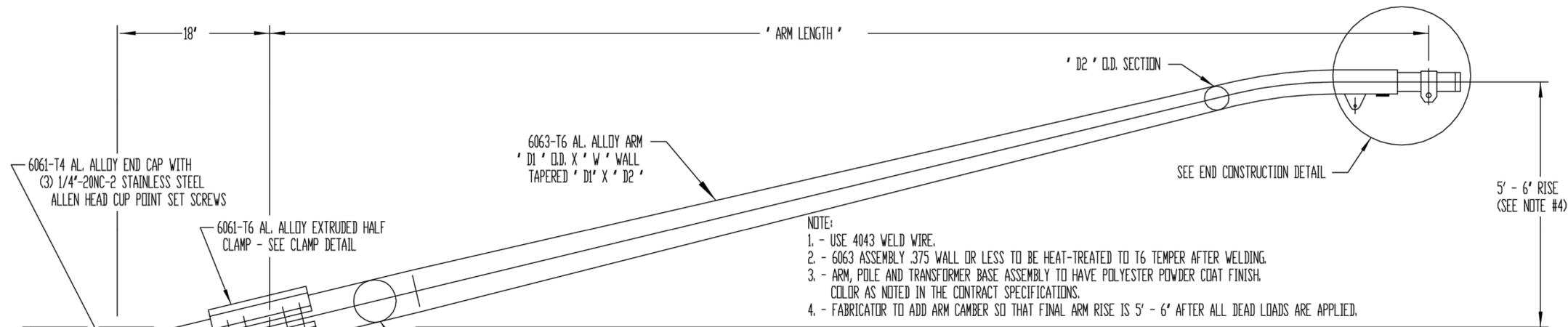
INTERSECTION IMPROVEMENTS PROJECT
FOR
DEFOREST AVENUE
CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

ELECTRICAL PLAN

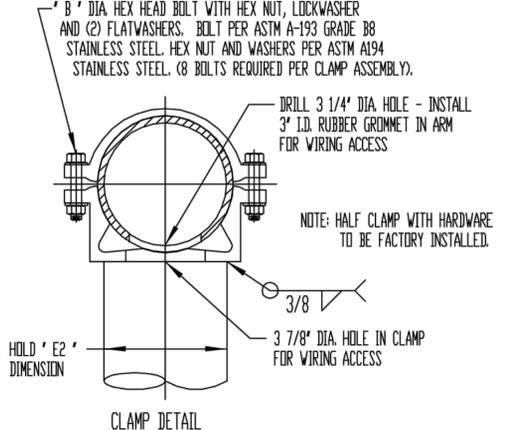
HAROLD E. FELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 240A27669000 CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph: (973) 949-6493 fax: (973) 949-2916	DRAWN BY: R.R.C./R.J.D. CHECKED BY: C.L.S. FIELD BOOK: N/A FILE No. 13-054	DATE: MAY 2015 SCALE: 1" = 10' SHEET No. 5 of 14
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CORY L. STONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. No. 41027

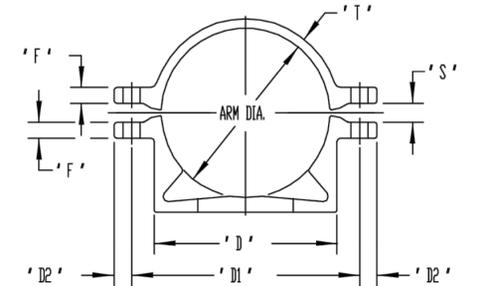
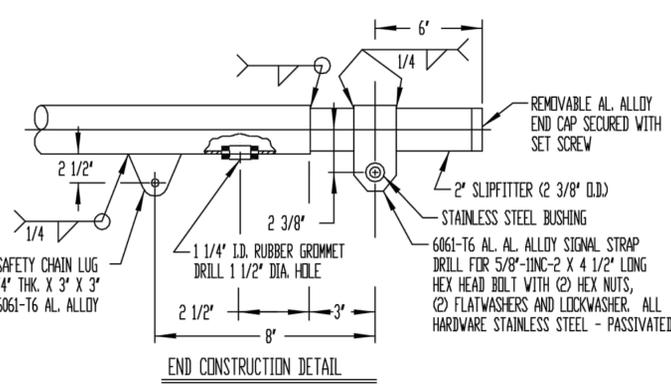
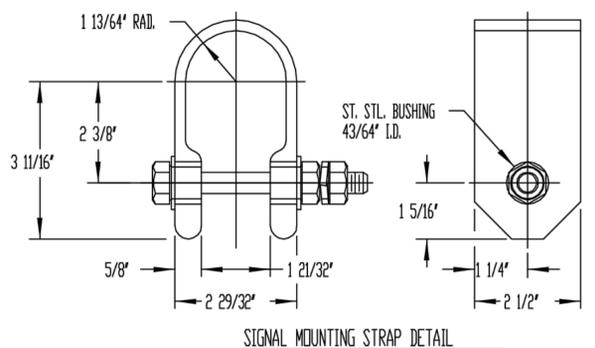
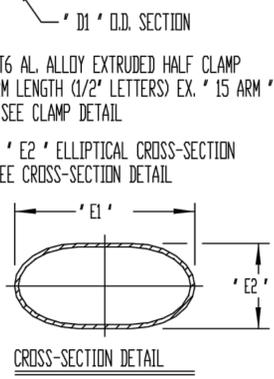
July 22, 2015 - 4:12 PM J:\Projects\Union County\DeForest Avenue Traffic Signal\Construction Details\10054-CD.dwg (Release) HAROLD E. FELLOW & ASSOCIATES, INC.



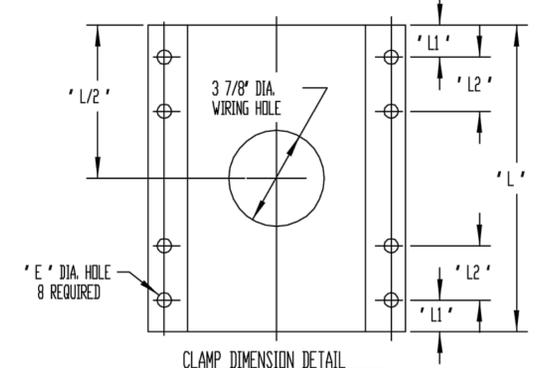
- NOTE:
 1. - USE 4043 WELD WIRE.
 2. - 6063 ASSEMBLY .375 WALL OR LESS TO BE HEAT-TREATED TO T6 TEMPER AFTER WELDING.
 3. - ARM, POLE AND TRANSFORMER BASE ASSEMBLY TO HAVE POLYESTER POWDER COAT FINISH. COLOR AS NOTED IN THE CONTRACT SPECIFICATIONS.
 4. - FABRICATOR TO ADD ARM CAMBER SO THAT FINAL ARM RISE IS 5' - 6' AFTER ALL DEAD LOADS ARE APPLIED.



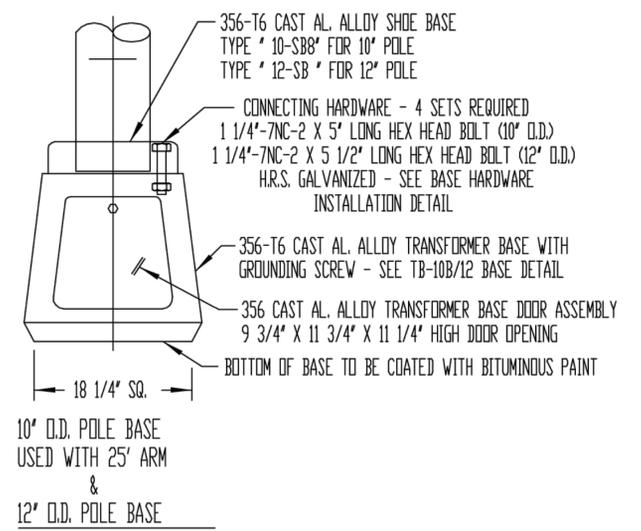
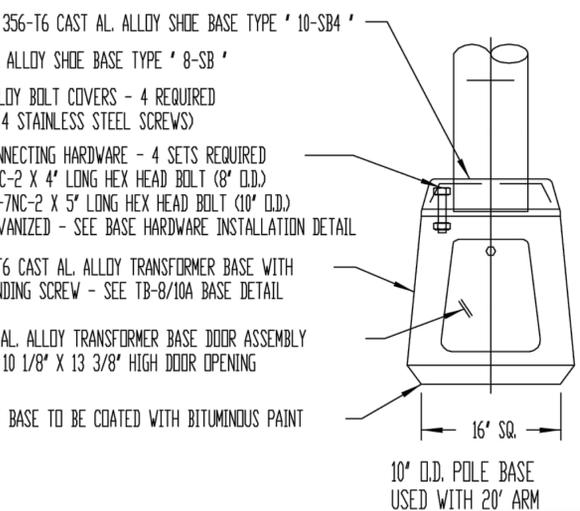
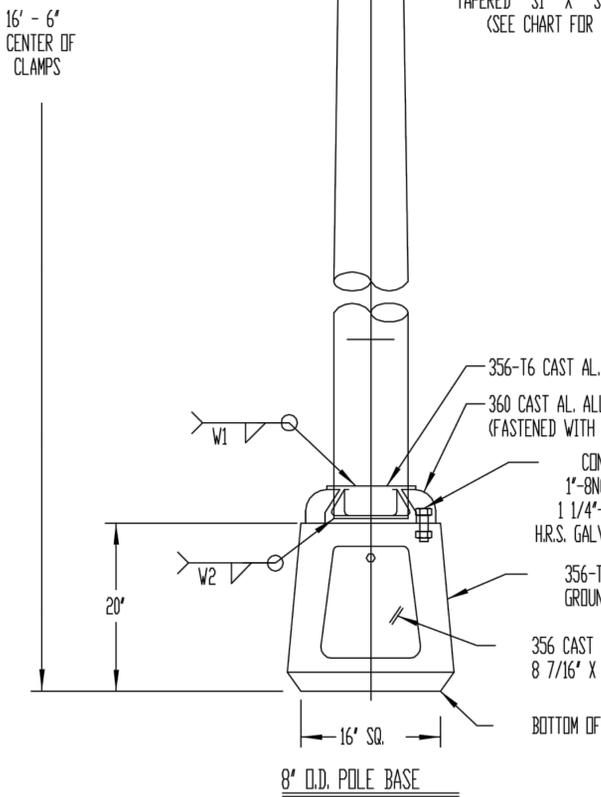
ARM SIZE	'E2'	'B'
6 5/8" O.D. X .156 WALL	5 7/8"	5/8"
8" O.D. X .156 WALL	8"	5/8"
8" O.D. X .188 WALL	8"	5/8"
10" O.D. X .188 WALL	9"	3/4"



UNION COUNTY CODE NO.	ARM LENGTH	ARM SIZE		TOP CROSS-SECTION 'E1' X 'E2'	SHAFT SIZE 'S1' X 'X' 'T' WALL	SHAFT TAPER 'S1' X 'X' 'S2' X 'X' 'S1'		BASE WELD SIZES 'W1' 'W2'	
		'D1' X 'X' 'W' WALL	'D2' X 'X' 'W' WALL			'S1' X 'X' 'S2'	'S1'	'W1'	'W2'
UC-SMA15-TB	15' - 0"	6 5/8" X .156 WALL	6 5/8" X 3"	9 1/2" X 5 7/8"	8" X .250 WALL	8" X 5 7/8" X 8"	5/16"	1/4"	
UC-SMA20-TB	20' - 0"	8" X .156 WALL	8" X 4"	11" X 8"	10" X .188 WALL	10" X 8" X 10"	1/4"	3/16"	
UC-SMA25-TB	25' - 0"	8" X .188 WALL	8" X 4"	11" X 8"	10" X .250 WALL	10" X 8" X 10"	5/16"	1/4"	
UC-SMA30-TB	30' - 0"	10" X .156 WALL	10" X 5"	14 5/8" X 9"	12" X .250 WALL	12" X 9" X 12"	5/16"	1/4"	
UC-SMA35-TB	35' - 0"	10" X .188 WALL	10" X 5"	14 5/8" X 9"	12" X .250 WALL	12" X 9" X 12"	5/16"	1/4"	



ARM DIA.	'D'	'D1'	'D2'	'F'	'S'	'T'	'L'	'L1'	'L2'	'E'
6 5/8"	7 3/16"	8 5/8"	5/8"	5/8"	13/16"	3/8"	12"	1 11/16"	2 1/8"	11/16"
8"	8 7/8"	10 5/8"	5/8"	3/4"	3/4"	11/16"	14"	1 3/16"	1 15/16"	11/16"
10"	10 1/8"	12 1/8"	7/8"	1 1/4"	2"	5/8"	18"	1 1/4"	2 3/4"	13/16"



CD-1
CD-9

INTERSECTION IMPROVEMENTS PROJECT FOR DEFOREST AVENUE

CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

CONSTRUCTION DETAILS

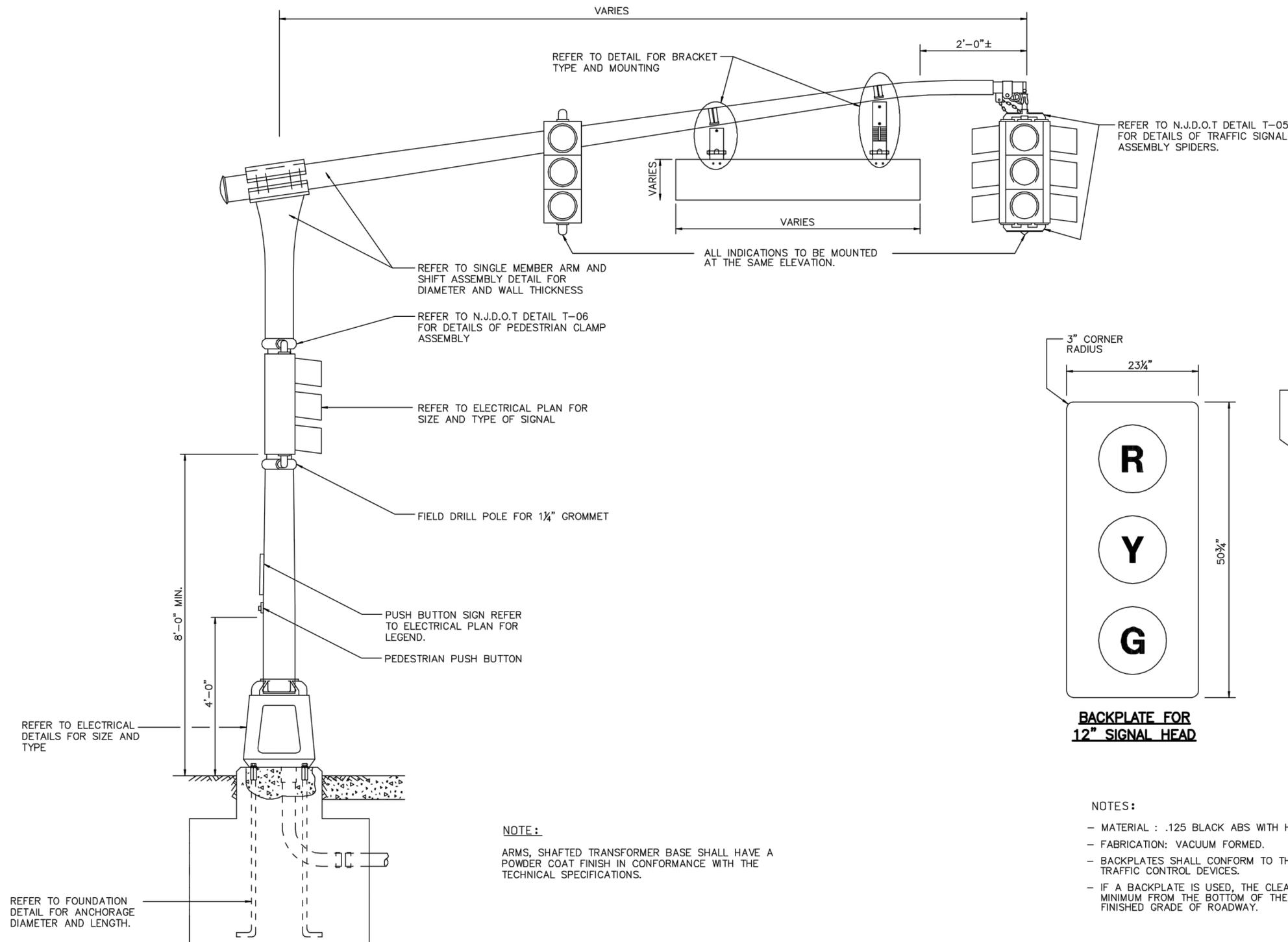
HAROLD E. FELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 240A2766000 CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph: (973) 948-6463 fax: (973) 948-2916	DRAWN BY: B.D.J. CHECKED BY: C.L.S. FIELD BOOK: N/A FILE No.: 13-054	DATE: JULY 2015 SCALE: AS SHOWN SHEET No.: 6 of 14
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CORY L. STONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. No. 41027

DATE _____

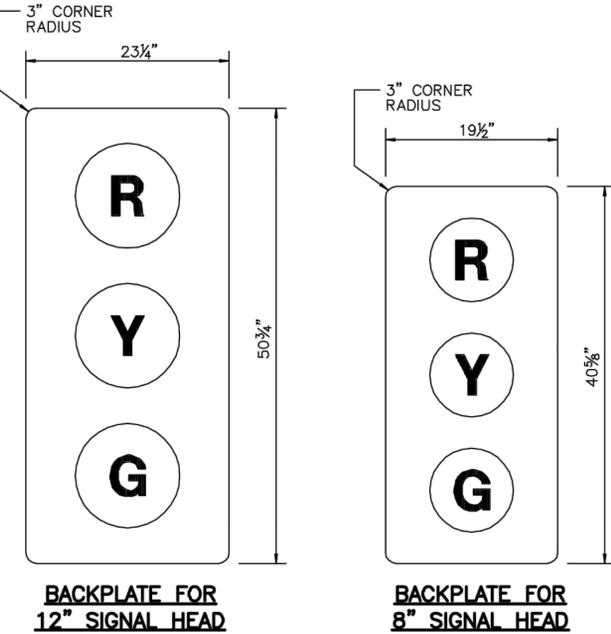
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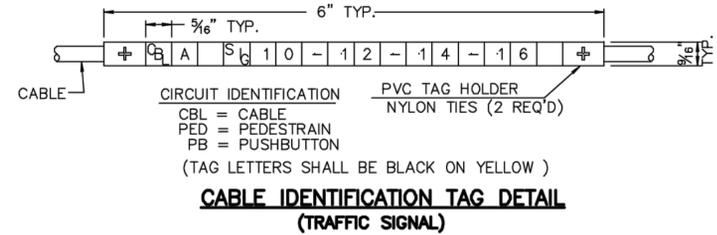
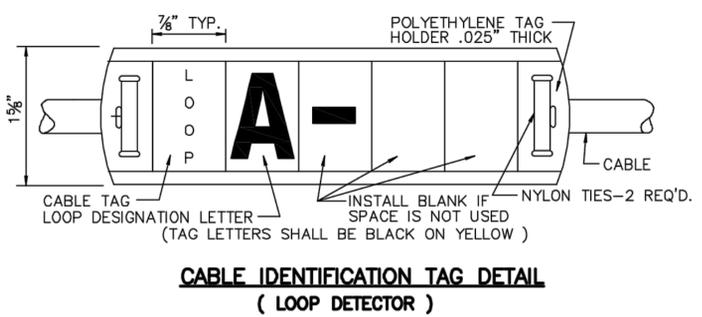


TYPICAL INSTALLATION

NOTE:
ARMS, SHAFTED TRANSFORMER BASE SHALL HAVE A POWDER COAT FINISH IN CONFORMANCE WITH THE TECHNICAL SPECIFICATIONS.



- NOTES:**
- MATERIAL : .125 BLACK ABS WITH HAIRCELL FINISH FRONT SIDE.
 - FABRICATION: VACUUM FORMED.
 - BACKPLATES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
 - IF A BACKPLATE IS USED, THE CLEARANCE SHALL BE 15'-6" MINIMUM FROM THE BOTTOM OF THE BACKPLATE TO THE FINISHED GRADE OF ROADWAY.



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CD-2
CD-9

INTERSECTION IMPROVEMENTS PROJECT FOR DEFOREST AVENUE

CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

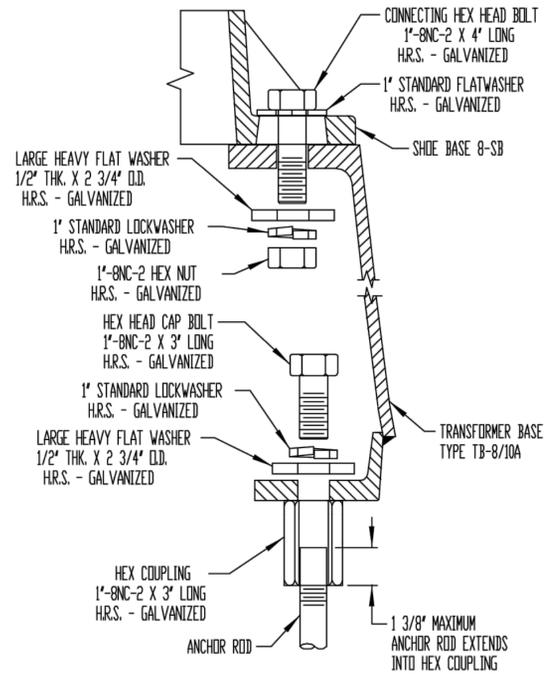
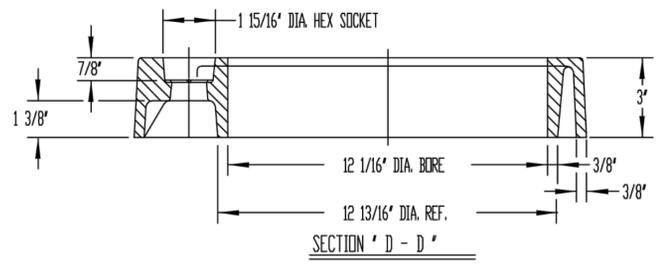
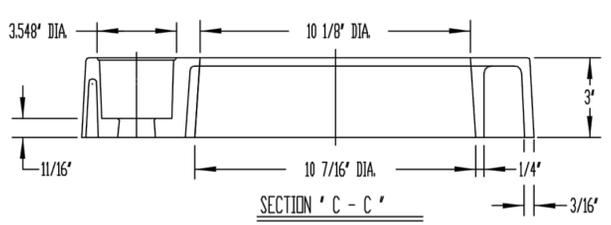
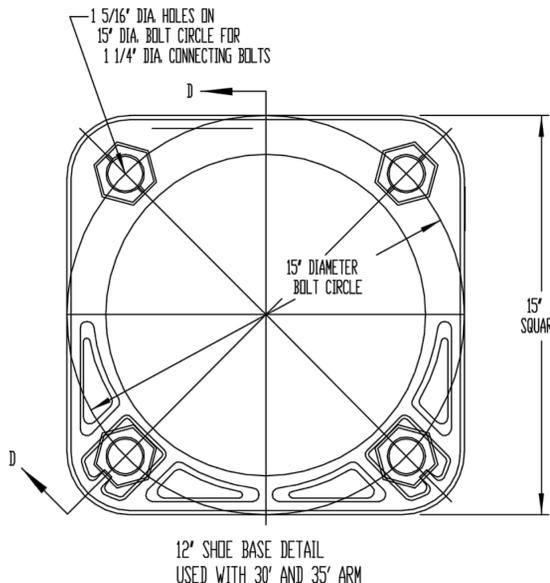
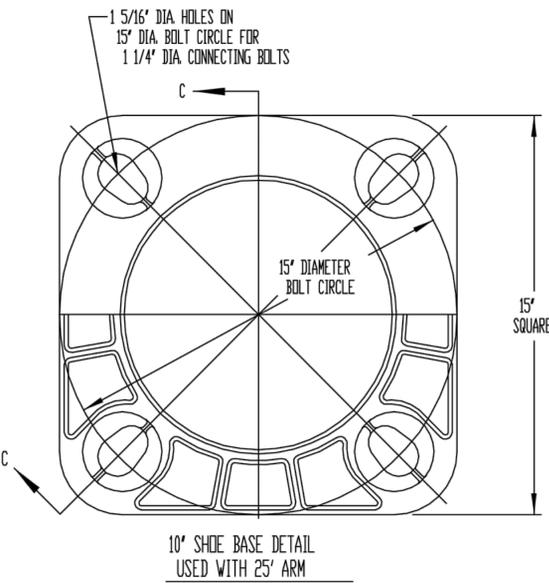
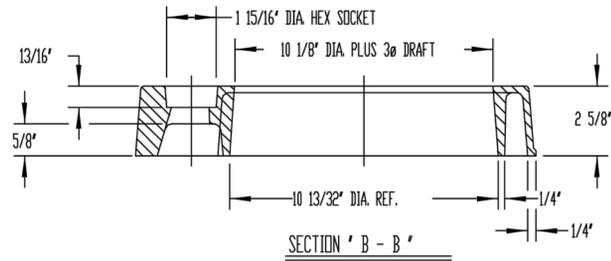
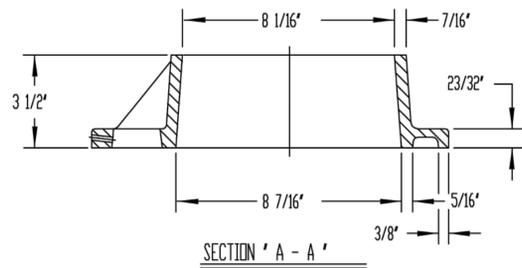
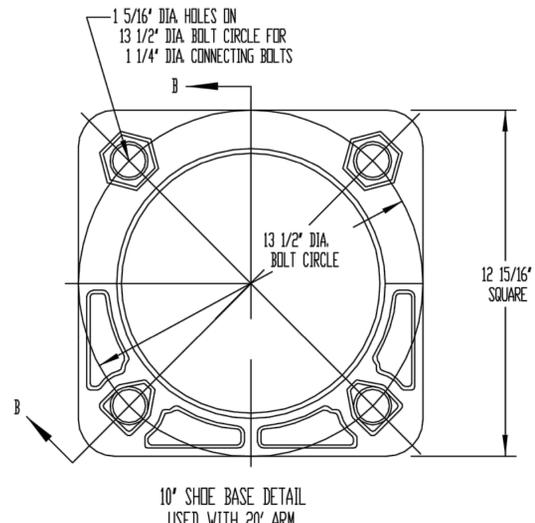
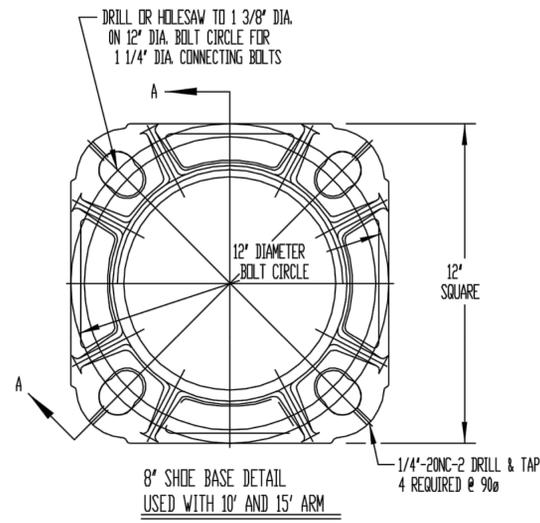
CONSTRUCTION DETAILS

	HAROLD E. PELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 240A27959000 CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph: (973) 948-6463 fax: (973) 948-2916	DRAWN BY: B.D.J. CHECKED BY: C.L.S. FIELD BOOK: N/A FILE No. 13-054	DATE: JULY 2015 SCALE: AS SHOWN SHEET No. 7 of 14
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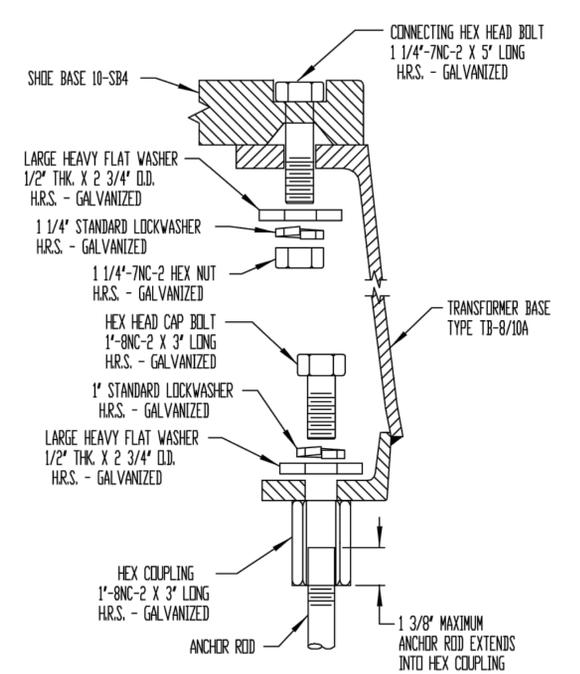
CORY L. STONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. No. 41027

DATE _____

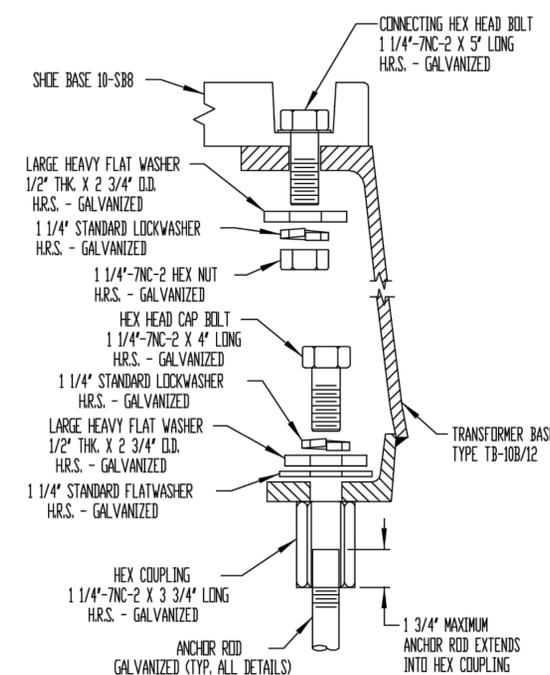
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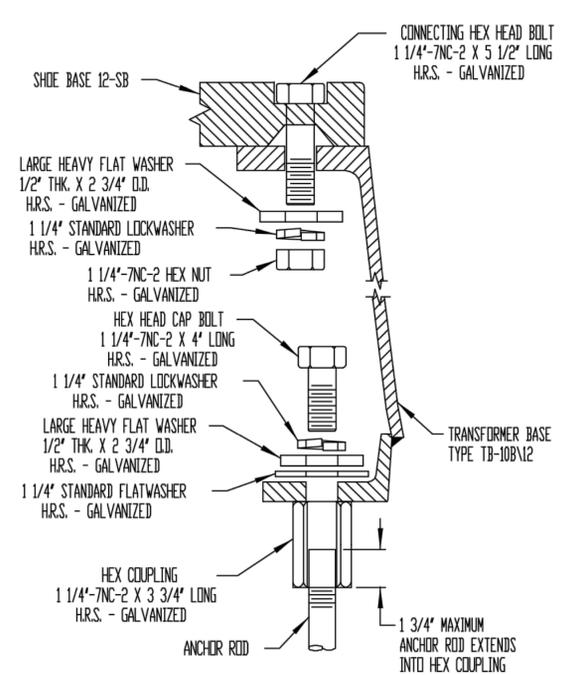
TRANSFORMER BASE HARDWARE INSTALLATION
8" D.D. SIGNAL POLE ASSEMBLY



TRANSFORMER BASE HARDWARE INSTALLATION
10" D.D. SIGNAL POLE ASSEMBLY USED WITH 20' ARM



TRANSFORMER BASE HARDWARE INSTALLATION
10" D.D. SIGNAL POLE ASSEMBLY USED WITH 25' ARM



TRANSFORMER BASE HARDWARE INSTALLATION
12" D.D. SIGNAL POLE ASSEMBLY
USED WITH 30' AND 35' ARM

CD-3
CD-9

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INTERSECTION IMPROVEMENTS PROJECT
FOR
DEFOREST AVENUE
CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

CONSTRUCTION DETAILS

HAROLD E. FELLOW & ASSOCIATES, INC.
CERTIFICATE OF AUTHORIZATION No. 240A27669000
CONSULTING ENGINEERS
17 PLAINS ROAD - AUGUSTA - N.J. 07922
ph: (973) 949-6463 fax: (973) 949-2916

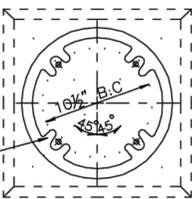
DRAWN BY: B.D.J.
CHECKED BY: C.L.S.
FIELD BOOK: N/A
FILE No.: 13-054

DATE: JULY 2015
SCALE: AS SHOWN
SHEET No.: 8 of 14

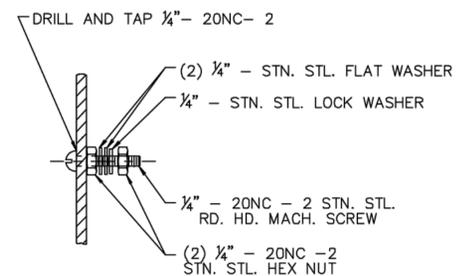
CORY L. STONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. No. 41027

DATE: _____

ANCHOR CLIPS SHALL BE CAST AS PART OF THE BASE OR SHALL BE ALUM. ALLOY 6061-T6

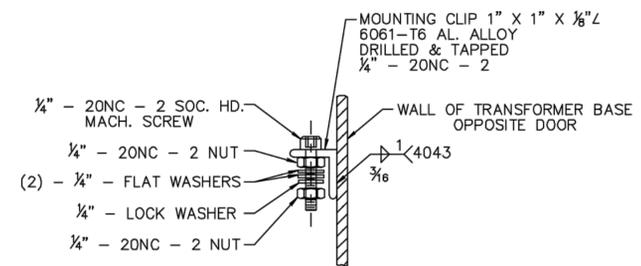


SECTION A-A



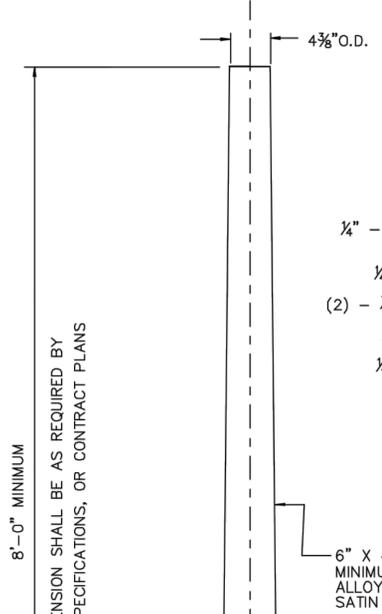
DETAIL "A"

GROUND STUD DETAIL OPPOSITE DOOR OPENING



ALTERNATE DETAIL "B"

GROUND STUD DETAIL OPPOSITE DOOR OPENING



8'-0" MINIMUM
MAXIMUM DIMENSION SHALL BE AS REQUIRED BY SUPPLEMENTARY SPECIFICATIONS, OR CONTRACT PLANS

FURNISH WITH EACH PEDESTAL

- 4 - 3/4" STD. HEX. HEAD BOLT } SEE ANCHOR BOLT DETAIL FOR TYPE
- 4 - 3/4" STD. PLAIN WASHER }

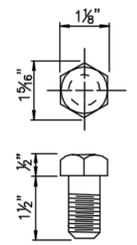
ATTACH DOOR TO BASE WITH AN APPROVED VANDAL RESISTANT LOCKING DEVICE USING A 1/2" STN. STL. GRADE B-8 SOCKET HEAD CAP SCREW.

DRILL & TAP 1/4"-20NC FOR 1/2" STAINLESS STEEL GROUND STUD OPPOSITE DOOR. SEE DETAIL 'A' OR ALTERNATE DETAIL 'B'.

BASE: CAST ALUMINUM - 356 -T6 AS CAST, ASTM DES. SG70A

DIMENSIONS SHOWN ARE FOR HANDHOLE CLEARANCES.

TRAFFIC SIGNAL PEDESTAL

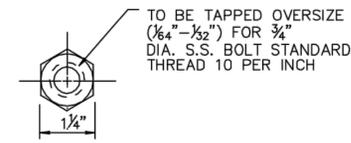


3/4" STD. HEX HD. BOLT

STAINLESS STEEL ASTM A-193 GRADE B8 U.S. STANDARD THREADS 10 PER INCH 4- REQ'D. PER PEDESTAL

3/4" SAE STD. PLAIN WASHER

STAINLESS STEEL 4- REQ'D. PER PEDESTAL

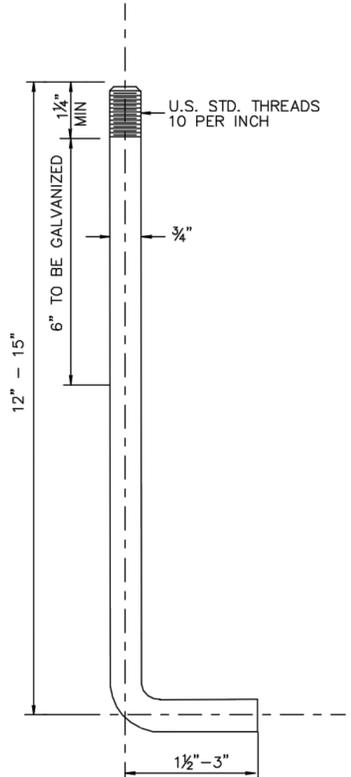


HEX STEEL ROD COUPLING

GALVANIZED PER ASTM A-153 3/4" U.S. STD. THREADS (SEE NOTE ABOVE) 1 1/4" HEX STOCK 4-REQ'D. PER PEDESTAL

3/4" STD. LOCK WASHER

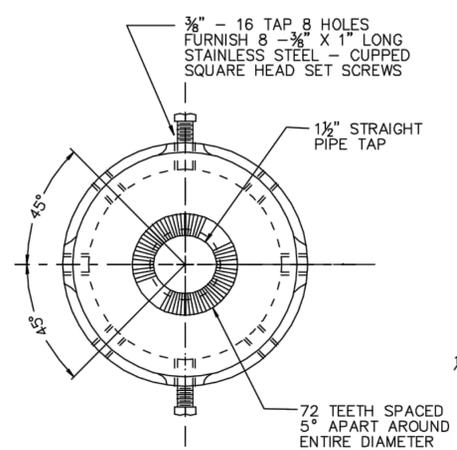
STAINLESS STEEL 4- REQ'D. PER PEDESTAL



3/4" DIA. ANCHOR BOLT

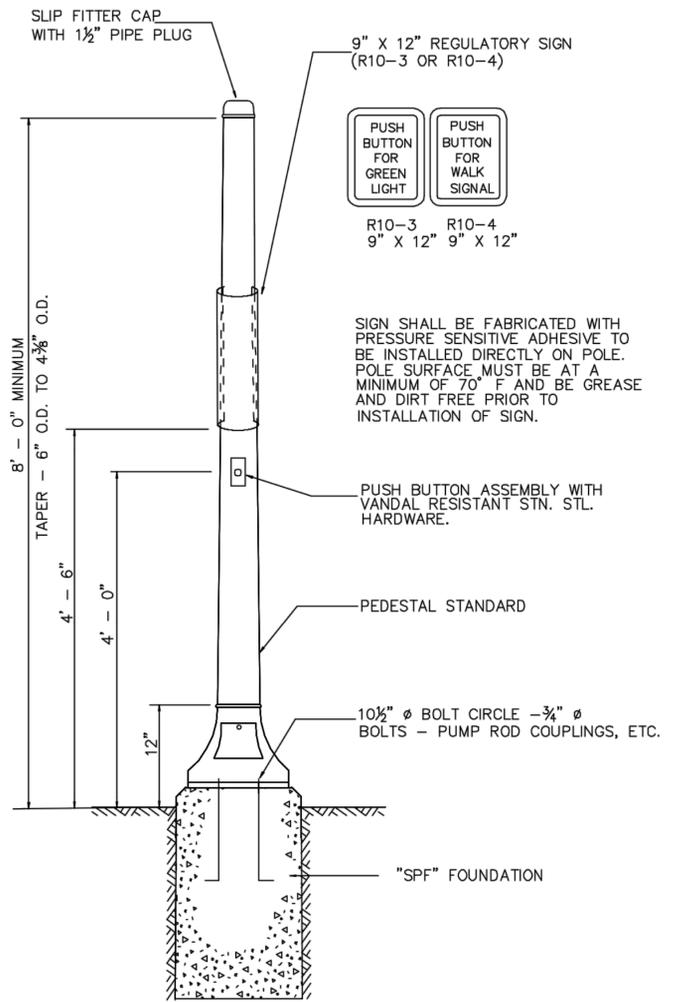
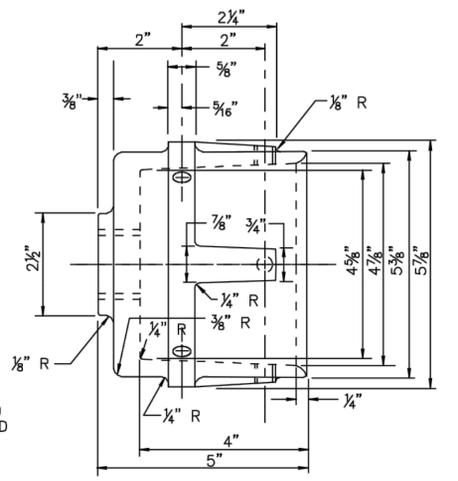
STEEL PER ASTM A-576 4- REQ'D. PER PEDESTAL TOP 6" SHALL BE GALVANIZED PER ASTM A-153

ANCHOR BOLT DETAIL



SLIP FITTER DETAIL

MATERIAL: ALUMINUM ALLOY 356



TYPICAL PUSH BUTTON STANDARD PUSH BUTTON ASSEMBLY INSTALLED

NOTES:

1. PEDESTAL STANDARDS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
2. ALL TOLERANCES OF CASTINGS SHALL BE ±1/32".

INTERSECTION IMPROVEMENTS PROJECT FOR DEFOREST AVENUE

CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

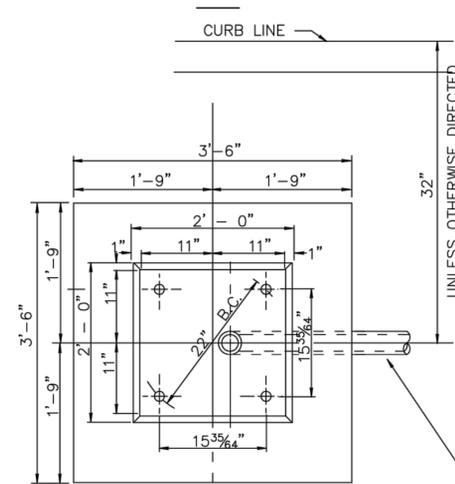
CONSTRUCTION DETAILS

HPA	HAROLD E. FELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 240A27959000	DRAWN BY: B.D.J.	DATE: JULY 2015
	CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph: (973) 949-6463 fax: (973) 949-2916	CHECKED BY: C.L.S.	SCALE: AS SHOWN
		FIELD BOOK: N/A	SHEET No. 9 of 14
		FILE No. 13-054	

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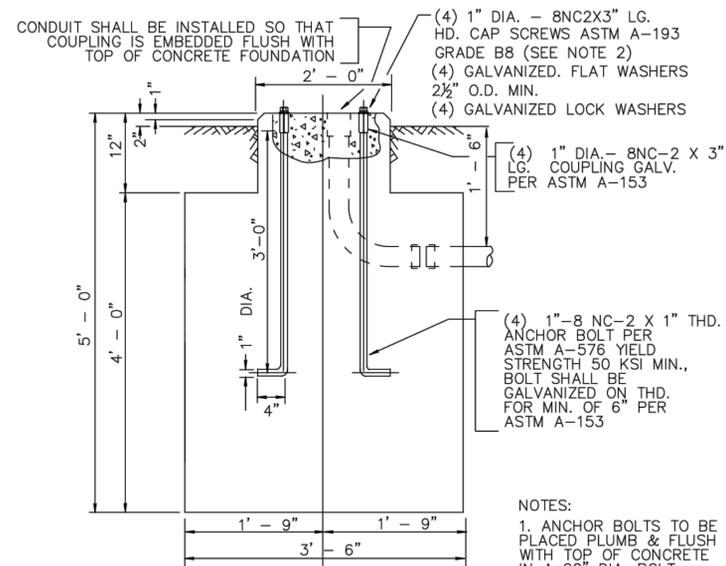
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July 22, 2015 - 4:12 PM J:\Projects\Union County\City Of Summit\DeForest Avenue Traffic Signal\Construction Details\15054-CD.dwg (Rédname) HAROLD E. PELLOW & ASSOCIATES, INC.



SEE GENERAL PLAN SHEETS FOR NUMBER & SIZE OF CONDUITS REQUIRED AND POSITION OR DIRECTION CONDUIT SHALL RUN.

PLAN



**ELEVATION
FOUNDATION TYPE "SFK"**

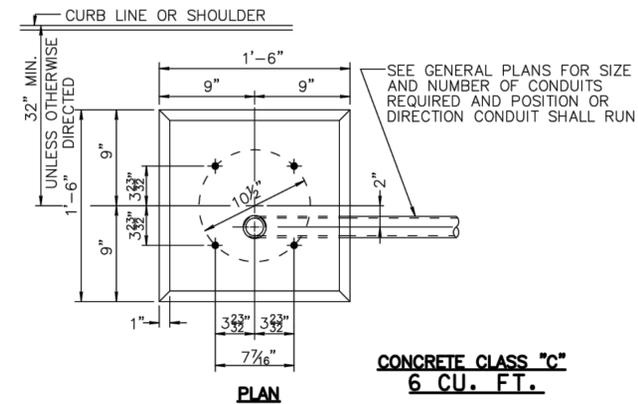
**CONCRETE CLASS "C"
2 CU. YDS.
FOUNDATION SHALL BE POURED
MONOLITHIC**

NOTES:

- ANCHOR BOLTS TO BE PLACED PLUMB & FLUSH WITH TOP OF CONCRETE IN A 22" DIA. BOLT CIRCLE $\pm \frac{1}{32}$ ".
- CAP SCREW SHALL PROVIDE A MINIMUM OF ONE INCH OF THREAD IN THE COUPLING WITHOUT BUTTING THE ANCHOR BOLT.
- ALL HEX HEAD CAP SCREWS, LOCK WASHERS AND FLAT WASHERS SHALL BE GALVANIZED PER ASTM A-153.

NOTES:

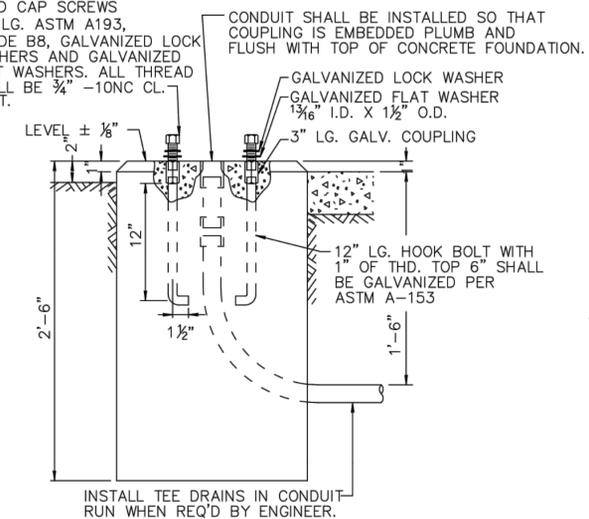
- ALL CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE EMBEDDED PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.
- J-BOLT MUST BE INSERTED $1\frac{1}{2}$ " $\pm \frac{1}{16}$ " INTO 3" COUPLING.



PLAN

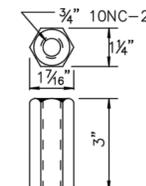
**CONCRETE CLASS "C"
6 CU. FT.**

4-3/4" DIA ANCHOR BOLTS WITH 1" OF THREAD. COUPLINGS, GALVANIZED HEX HEAD CAP SCREWS 1 1/2" LG. ASTM A193, GRADE B8, GALVANIZED LOCK WASHERS AND GALVANIZED FLAT WASHERS. ALL THREAD SHALL BE 3/4" -10NC CL. 2 FIT.



ELEVATION

PEDESTAL FOUNDATION TYPE "SPF"



**GALVANIZED
COUPLING**

GALV. PER ASTM A-153
CONTINUOUS THREADS

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CD-5
CD-9

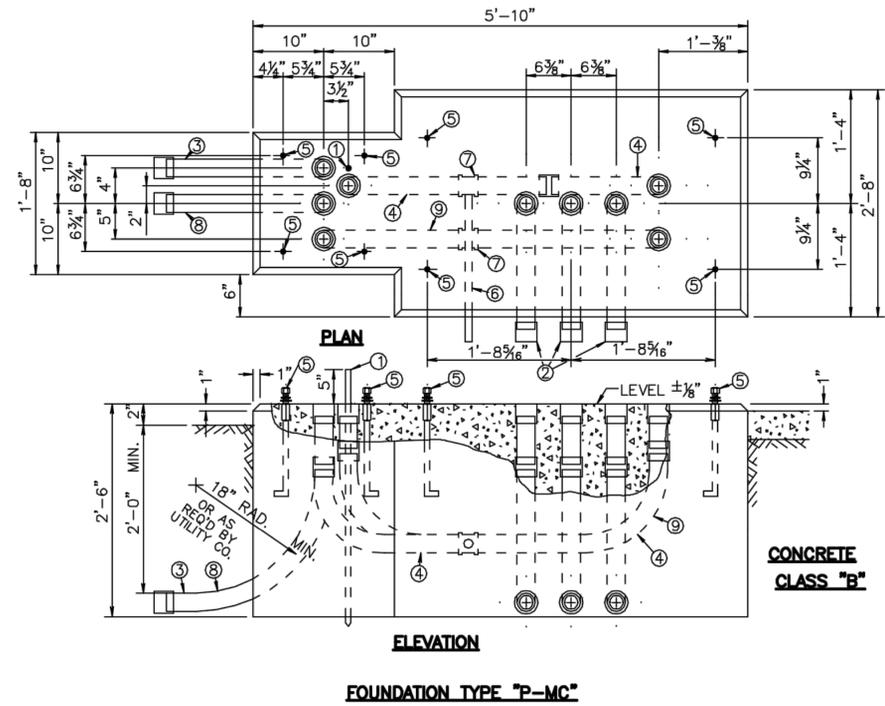
INTERSECTION IMPROVEMENTS PROJECT
FOR
DEFOREST AVENUE
CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

CONSTRUCTION DETAILS

HPA	HAROLD E. PELLOW & ASSOCIATES, INC. CERTIFICATE OF AUTHORIZATION No. 240A27669000	DRAWN BY: B.D.J.	DATE: JULY 2015
	CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph: (973) 949-6463 fax: (973) 949-2916	CHECKED BY: C.L.S.	SCALE: AS SHOWN
		FIELD BOOK: N/A	SHEET No. 10 of 14
		FILE No. 13-054	

CORY L. STONER, P.E.
PROFESSIONAL ENGINEER N.J. LIC. No. 41027

DATE



- ITEM**
- ① 5/8" X 12' LG. GROUND ROD.
 - ② 3" DIA. RIGID METALLIC CONDUIT. (ALL SHALL EXTEND TO JUNCTION BOX)
 - ③ RIGID METALLIC CONDUIT (SERVICE CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE
 - ④ 2" DIA. RIGID METALLIC CONDUIT (SERVICE CONDUIT)
 - ⑤ 3/4" DIA. ANCHOR BOLTS (SEE "SPF" FOUNDATION FOR DETAILS)
 - ⑥ DRAIN 1" DIA. RIGID METALLIC CONDUIT (PITCH TO JUNCTION BOX)
 - ⑦ 2" X 2" X 1" GALV. TEE FITTING.
 - ⑧ RIGID METALLIC CONDUIT (INTERCONNECT CONDUIT). SEE GENERAL PLAN FOR DIRECTION AND SIZE IF NOT SPECIFIED 2" DIA. RMC SHALL BE INSTALLED.
 - ⑨ 2" DIA. RIGID METALLIC CONDUIT (INTERCONNECT CONDUIT)

- NOTES:**
1. ALL CONDUIT SHALL BE INSTALLED SO THAT COUPLINGS ARE EMBEDDED PLUMB AND FLUSH WITH TOP OF CONCRETE FOUNDATION.
 2. J-BOLT MUST BE INSERTED 1 1/2" ± 1/8" INTO 3" COUPLING
 3. ALL FOUNDATIONS SHALL BE POURED MONOLITHIC

CD-6
CD-9

**INTERSECTION IMPROVEMENTS PROJECT
FOR
DEFOREST AVENUE**

CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

CONSTRUCTION DETAILS

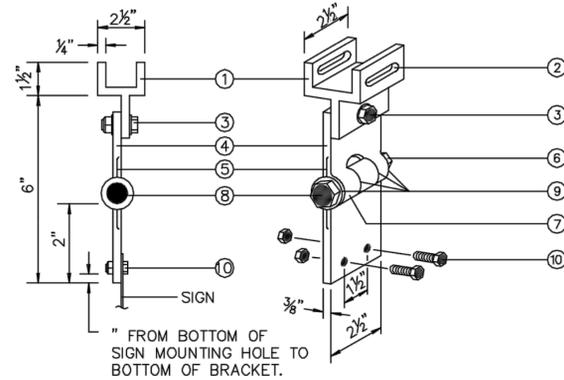
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	CONSULTING ENGINEERS 17 PLAINS ROAD - AUGUSTA - N.J. 07922 ph: (973) 948-6463 fax: (973) 948-2916	CHECKED BY: N/A	FIELD BOOK: 13-054	SCALE: AS SHOWN

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PROFESSIONAL ENGINEER N.J. LIC. No. 41027

DATE _____

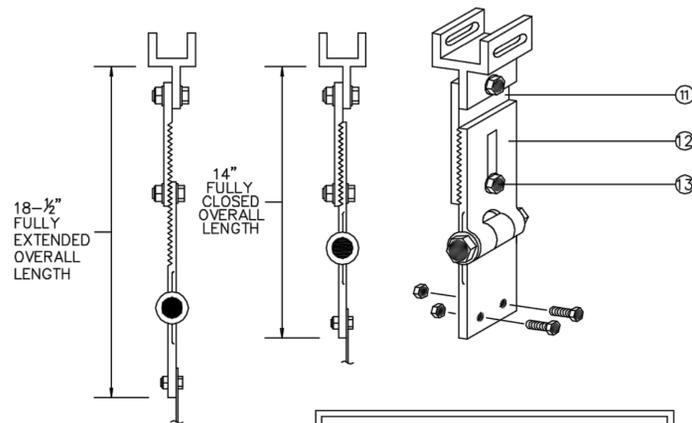
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FIXED LENGTH NON-ADJUSTABLE SWING SIGN BRACKET



- ① PIVOTAL UPPER BRACKET.
- ② 1 3/8" x 1/4" SLOT FOR DOUBLE STRAPPING TO MAST ARM. (M2G-34S(HD) .030 x 3/4" HEAVY DUTY STAINLESS STEEL STRAP WITH M2G-34B(HD) BUCKLE RECOMMENDED.)
- ③ 1/2"-13 x 1 1/2" STAINLESS STEEL HEX HEAD BOLT WITH STAINLESS STEEL HEX LOCK NUT AND STAINLESS STEEL WASHER (BOTH SIDES). ALLOWS UPPER BRACKET TO PIVOT AND ALIGN WITH MAST ARM.
- ④ 6" OVERALL DROP WITH FIXED LENGTH SIGN BRACKET.
- ⑤ STAINLESS STEEL DAMPENER SPRING (REMOVABLE).
- ⑥ STAINLESS STEEL HEX LOCK NUT WITH 1/8" STAINLESS STEEL WASHER.
- ⑦ 1" O.D. AXLE HOUSING.
- ⑧ 1/2"-13 x 4" STAINLESS STEEL HEX HEAD BOLT WITH 1/8" STAINLESS WASHER.
- ⑨ OILITE BUSHING.
- ⑩ SIGN MOUNTING SETS, CONSISTING OF TWO EACH 5/16"-18 x 1" STAINLESS STEEL HEX HEAD BOLT WITH STAINLESS STEEL HEX LOCK NUT. TWO HOLES ON 1 1/2" CENTERS PROVIDE POSITIVE LOCK SIGN MOUNTING TO BRACKET.

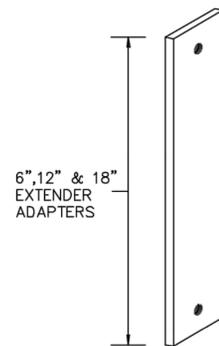
ADJUSTABLE LENGTH SWING SIGN BRACKET



- ⑪ 8 1/4" OVERALL LENGTH UPPER ADJUSTABLE SIGN BRACKET SECTION.
- ⑫ 9" OVERALL LENGTH LOWER ADJUSTABLE SIGN BRACKET SECTION, INCLUDING AXLE HOUSING (8" OVERALL LENGTH TO TOP OF AXLE HOUSING).
- ⑬ 1/2"-13 x 1 1/2" STAINLESS STEEL HEX BOLT WITH STAINLESS STEEL HEX LOCK NUT AND STEEL WASHERS (BOTH SIDES). LOOSEN LOCK NUT, ADJUST BRACKET TEETH TO LEVEL SIGN.

EXTENDER ADAPTERS

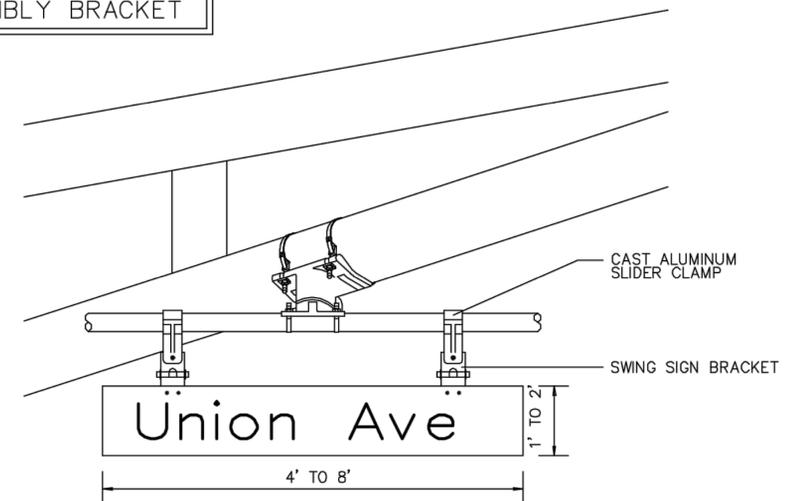
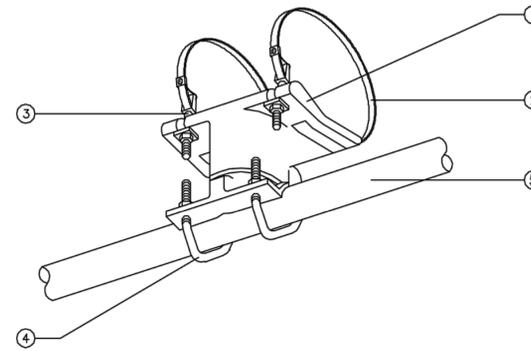
FOR ADJUSTABLE LENGTH SWING SIGN BRACKET. EXTENDS BRACKET TO LEVEL SIGN. FITS ANY DEGREE OF MAST ARM RISE.



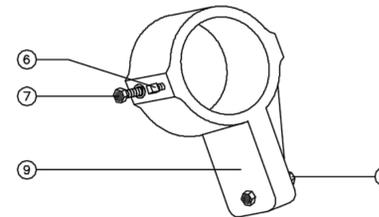
- ① REMOVE PIVOT POINT BOLT FROM ADJUSTABLE LENGTH SIGN BRACKET.
- ② SEPARATE PIVOTAL UPPER BRACKET FROM ADJUSTABLE SIGN BRACKET SECTION.
- ③ BOLT TOP EXTENDER ADAPTER HOLE TO PIVOTAL UPPER BRACKET WITH EXTRA PIVOT POINT BOLT. SECURE NUT, RETAINING EASY SWING MOTION AT PIVOT POINT.
- ④ BOLT BOTTOM EXTENDER ADAPTER HOLE TO ADJUSTABLE SIGN BRACKET SECTION. TIGHTEN NUT.
- ⑤ ADJUST SIGN TO LEVEL.

EXTENDER ADAPTERS ARE ALL ALUMINUM 6061T6 ALLOY. 3/8" THICK x 2 1/2" WIDE BAR x VARIABLE LENGTH COMPLETE WITH ONE HOLE EACH END FOR 1/2" BOLT. EACH EXTENDER BAR INCLUDES ONE PIVOT POINT 1/2"-13 x 1 1/2" STAINLESS STEEL HEX HEAD BOLT WITH HEX LOCK NUT AND 2 WASHERS. (EXTENDER ADAPTERS ARE AVAILABLE IN VARIABLE LENGTHS ON REQUEST.)

MAST ARM ASSEMBLY BRACKET

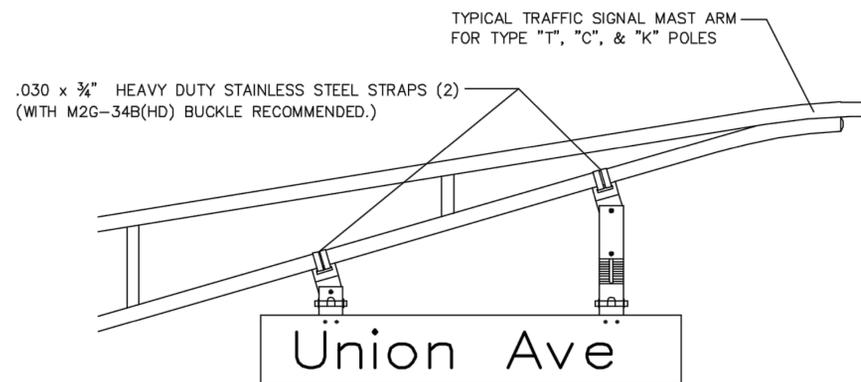
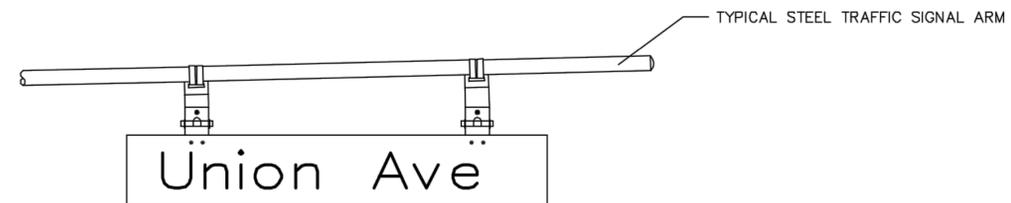


SLIDER CLAMP



- ① CLAMP SHALL BE ALUMINUM ALLOY (356-T6)
- ② 5/8" STAINLESS STEEL STRAP (2) WITH 5/8" BANDCLAMP.
- ③ STAINLESS STEEL CLAMP SCREW WITH BEARING WASHER, 7/16" FLATWASHER & 7/16" - 14 HEX NUT. CLAMP SCREW SHALL BE INSTALLED WITH MAINTAINING A MINIMUM OF 1/4" CLEARANCE TO THE MAST ARM CLAMP.
- ④ 5/16" - 18 x 1 3/4" x 2 5/8" x 7/8" U-BOLT WITH 5/16" SPLIT LOCKWASHER & 5/16" - 18 HEX NUT.
- ⑤ 1 1/2" ALUMINUM TUBE
- ⑥ 3/8" SQUARE HEAD SET SCREW
- ⑦ 5/16" x 1 1/2" HEX BOLT WITH LOCKWASHER
- ⑧ 3/8" x 1 1/2" STAINLESS STEEL HEX HEAD BOLT WITH STAINLESS STEEL HEX LOCK NUT AND 1/8" STAINLESS STEEL WASHER (BOTH SIDES). A BRONZE REDUCER BUSHING (1/2" TO 3/8") SHALL BE USED INSIDE THE SLIDER CLAMP.
- ⑨ CAST ALUMINUM SLIDER CLAMP

NOTE:
INSTALLATION OF SLIDER:
DRILL 3/8" HOLE THRU ONE WALL OF PIPE.
TIGHTEN 5/16" x 1 1/2" HEX BOLT WITH LOCKWASHER INTO SLIDER THRU HOLE IN PIPE. ATTACH 3/8" SQUARE HEAD SET SCREW.



CD-7
CD-9

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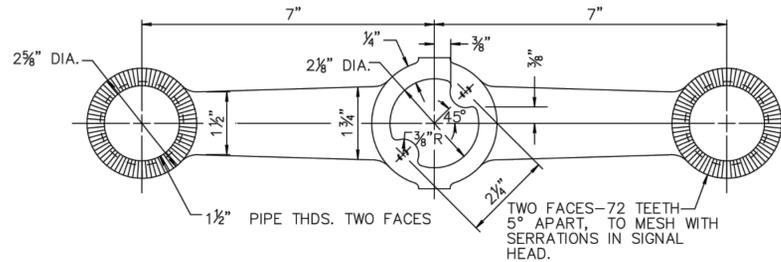
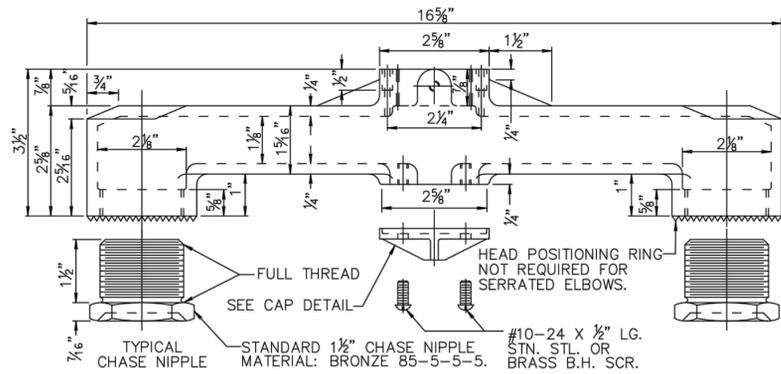
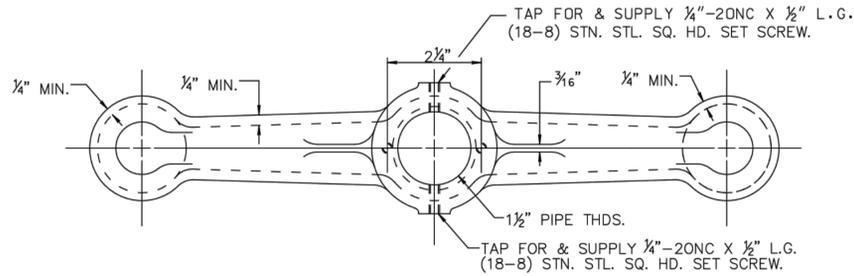
CONSTRUCTION DETAILS

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		FILE No.:	

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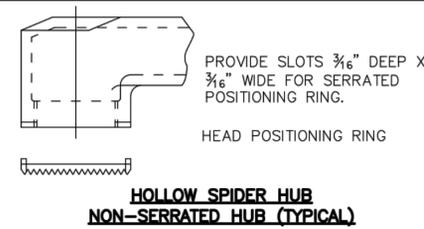
July 22, 2015 - 4:12 PM J:\Projects\Union County\City Of Summit\Deforest Avenue Traffic Signals\Construction Details\13054-CD.dwg (Release) HAROLD E. FELLOW & ASSOCIATES, INC.



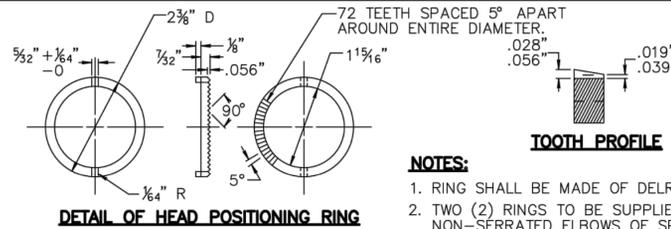
HOLLOW SPIDER FOR 2-WAY ASSEMBLY
MATL. ALUM ALLOY 356

NOTE:

- EACH HOLLOW SPIDER FOR 2-WAY ASSEMBLY SHALL CONSIST OF:
 - 2-WAY SPIDER
 - STANDARD 1 1/2" CHASE NIPPLE, BRONZE 85-5-5-5
 - CAP
 - 10-24 X 1/2" LG. STN. STL. OR BRASS BH. SCREWS
 - HEAD POSITIONING RINGS, IF NON-SERRATED HUBS
 - T-BAR ASSEMBLY (SEE T-BAR NOTE 2)



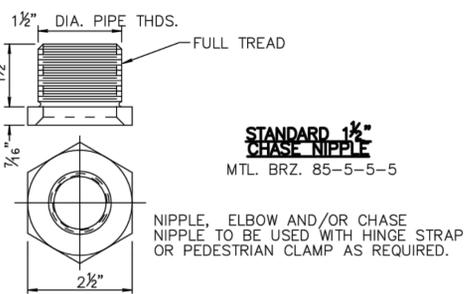
**HOLLOW SPIDER HUB
NON-SERRATED HUB (TYPICAL)**



DETAIL OF HEAD POSITIONING RING

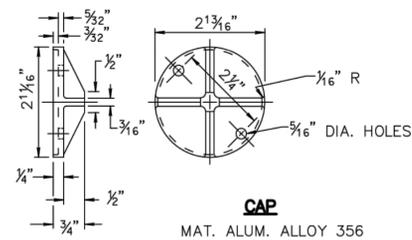
NOTES:

- RING SHALL BE MADE OF DELRIN.
- TWO (2) RINGS TO BE SUPPLIED WITH NON-SERRATED ELBOWS OF SPIDER ASSEMBLIES.



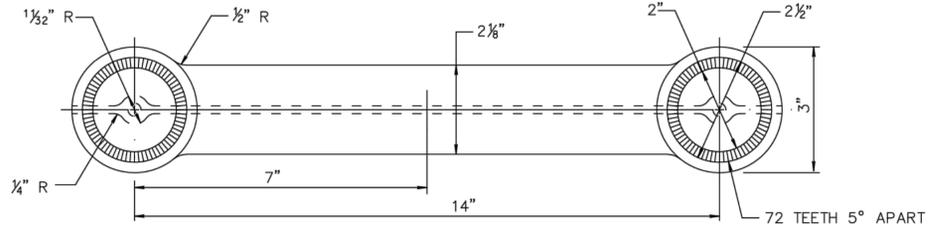
STANDARD 1 1/2\"/>

NIPPLE, ELBOW AND/OR CHASE NIPPLE TO BE USED WITH HINGE STRAP OR PEDESTRIAN CLAMP AS REQUIRED.



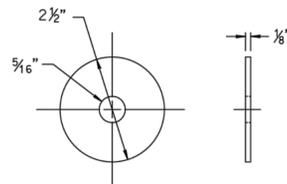
CAP

MAT. ALUM. ALLOY 356



T-BAR

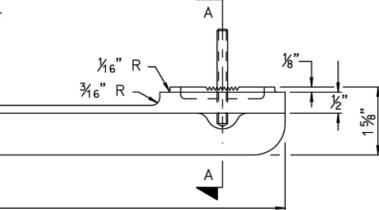
MATL. ALUM ALLOY 356



WASHER
MATL. ALUMINUM

NOTES:

- EACH T-BAR ASSEMBLY SHALL CONSIST OF:
 - T-BAR
 - WASHERS
 - 3/16" DIA. STN. STL. LOCKWASHERS
 - 3/16"-18NC STN. STL. HEX NUTS
- FOR USE WITH 2-WAY HOLLOW SPIDER ASSEMBLIES WHERE SIGNAL FACES ARE SAME SIZE AND CONFIGURATION.



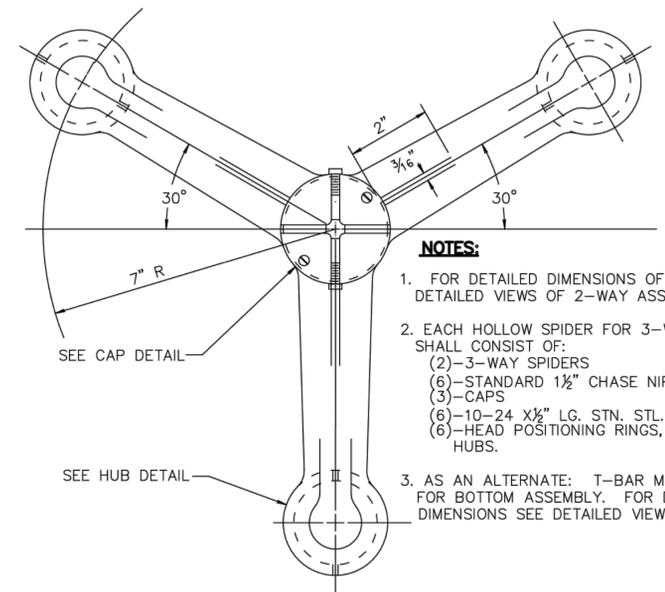
SECTION A-A

PAINT

THE SURFACE OF THE ALUMINUM CASTING MUST BE CLEANED, DEGREASED AND SHOP PAINTED WITH ONE COAT OF ZINC CHROMATE-IRON-OXIDE PAINT CONFORMING TO THE CURRENT REQUIREMENTS OF SPECIFICATION M-142 OF AASHTO. WHEN THIS PAINT HAS THOROUGHLY DRIED, IT SHALL THEN BE SHOP PAINTED WITH A COAT OF YELLOW ENAMEL PAINT READY MIXED CONFORMING TO THE REQUIREMENTS OF FEDERAL SPECIFICATIONS 595A FOR ENAMEL; GLOSS, SYNTHETIC (FOR EXTERIOR AND INTERIOR SURFACES) CLASS A, AIR DRYING THE TINT OF WHICH SHALL MATCH GLOSS-YELLOW STANDARD COLOR NO. 1353B, AS SHOWN IN THE FEDERAL SPECIFICATION 595A COLOR; (FOR READY MIXED PAINT).

NOTES:

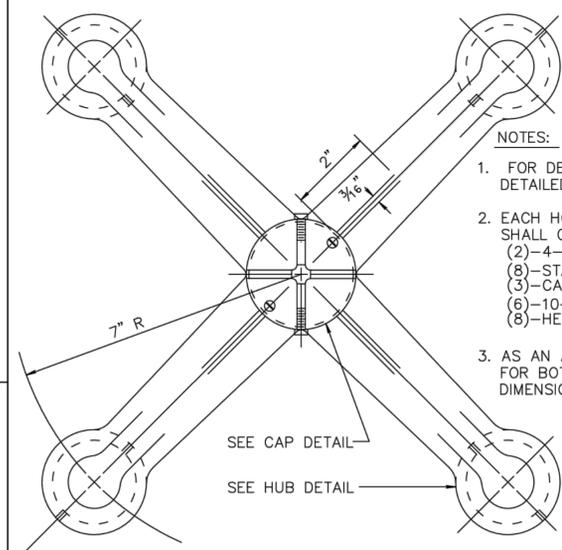
- UNITS SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.
- ALL TOLERANCES OF CASTINGS SHALL BE ± 1/32".
- ALL STAINLESS STEEL BOLTS ON THIS SHEET PER ASTM A193 GRADE B8.



HOLLOW SPIDER FOR 3-WAY ASSEMBLY

NOTES:

- FOR DETAILED DIMENSIONS OF 3-WAY SPIDER SEE DETAILED VIEWS OF 2-WAY ASSEMBLY.
- EACH HOLLOW SPIDER FOR 3-WAY ASSEMBLY SHALL CONSIST OF:
 - 3-WAY SPIDERS
 - STANDARD 1 1/2" CHASE NIPPLES, BRONZE 85-5-5-5
 - CAPS
 - 10-24 X 1/2" LG. STN. STL. OR BRASS BH. SCREWS
 - HEAD POSITIONING RINGS, IF NON-SERRATED HUBS.
- AS AN ALTERNATE: T-BAR MAY BE UTILIZED FOR BOTTOM ASSEMBLY. FOR DETAILED DIMENSIONS SEE DETAILED VIEWS OF T-BAR.



HOLLOW SPIDER FOR 4-WAY ASSEMBLY

NOTES:

- FOR DETAILED DIMENSIONS OF 4-WAY SPIDER SEE DETAILED VIEWS OF 2-WAY ASSEMBLY.
- EACH HOLLOW SPIDER FOR 4-WAY ASSEMBLY SHALL CONSIST OF:
 - 4-WAY SPIDERS
 - STANDARD 1 1/2" CHASE NIPPLES, BRONZE 85-5-5-5
 - CAPS
 - 10-24 X 1/2" LG. STN. STL. OR BRASS BH. SCREWS
 - HEAD POSITIONING RINGS, IF NON-SERRATED HUBS.
- AS AN ALTERNATE: T-BAR MAY BE UTILIZED FOR BOTTOM ASSEMBLY. FOR DETAILED DIMENSIONS SEE DETAILED VIEWS OF T-BAR.

CD-9
CD-9

**INTERSECTION IMPROVEMENTS PROJECT
FOR
DEFOREST AVENUE**

CITY OF SUMMIT - UNION COUNTY - NEW JERSEY

CONSTRUCTION DETAILS



HAROLD E. FELLOW & ASSOCIATES, INC.
CERTIFICATE OF AUTHORIZATION No. 240A2766000
CONSULTING ENGINEERS
17 PLAINS ROAD - AUGUSTA - N.J. 07922
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DRAWN BY: B.D.J. DATE: JULY 2015
CHECKED BY: C.L.S. SCALE: AS SHOWN
FIELD BOOK: N/A SHEET No. 14 of 14
FILE No. 13-054

CORY L. STONER, P.E.

PROFESSIONAL ENGINEER N.J. LIC. No. 41027

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