EAST VILLA MARIA ROAD/JOSEPH DRIVE - SIGNAL & ROADWAY IMPROVEMENTS

CONSTRUCTION PLANS
FOR

CITY OF BRYAN

The Good Life, Texas Style.

P.O. BOX 1000 BRYAN, TEXAS 77805

EAST VILLA MARIA ROAD/JOSEPH DRIVE
SIGNAL & ROADWAY IMPROVEMENTS PROJECT

CITY PROJECT #750-D7-1405

JULY, 2014

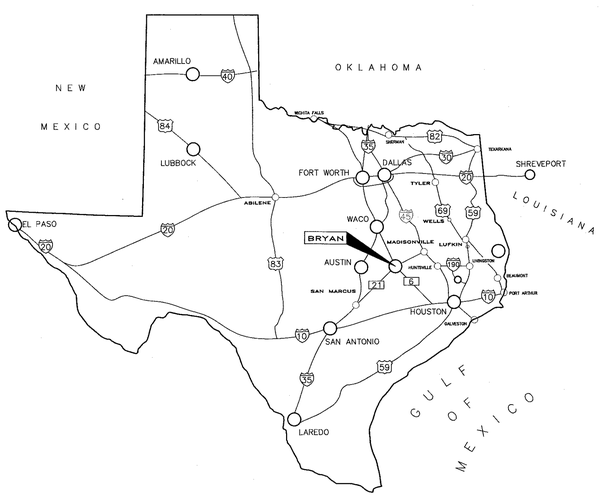
MAYOR & CITY COUNCIL

Jason P. Bienski.....Mayor
Ann Horton.....Mayor Pro Tem
Al Saenz.....City Council
Rafael Pena III.....City Council
Greg Owens.....City Council
Art Hughes.....City Council
Chuck Konderla.....City Council

CITY ADMINISTRATION & STAFF

Kean Register.....City Manager
Jayson Barfknecht, PhD, P.E.....Director of Public Works
W. Paul Kaspar, P.E.....City Engineer
Mark Robertson, P.E.....Project Manager

PROJECT LOCATION MAP



SUBMITTED: JOHN RUSK, P.E.

STATE OF TEXAS — JOHN RUSK — 87884 — LICENSED PROFESSIONAL ENGINEER

DATE : 7/1/2014

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GLS
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ENGINEERING · ARCHITECTURE · INTERIOR DESIGN · SURVEYING
1609 S. CHESTNUT DR. STE. 202 - LUFKIN, TEXAS 75901 - (936) 637-4900
4077 CROSS PARK DR. STE. 100 - BRYAN, TEXAS 77802 - (979) 776-9700
TBPE FIRM REGISTRATION #413 - TBPLS FIRM REGISTRATION #10110901

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EAST VILLA MARIA ROAD/JOSEPH DRIVE - SIGNAL & ROADWAY IMPROVEMENTS

1. CONSTRUCTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE CITY OF BRYAN AND THESE SPECIFICATIONS/PLANS.

2. CONTRACTOR SHALL VISIT THE CONSTRUCTION LOCATION AND FAMILIARIZE THEMSELVES WITH THE WORKING CONDITIONS (TRAFFIC, CLEARING, PROPOSED/EXISTING UTILITIES, PAVING, DRAINAGE) OF THE SITE BEFORE BIDDING.

3. CONTRACTOR IS TO DETERMINE ALL QUANTITIES OF WORK PRIOR TO BIDDING TO PROVIDE A COMPLETE AND APPROVED PROJECT TO THE CITY.

4. THE CONTRACTOR IS REQUIRED TO ATTEND A PRE-CONSTRUCTION MEETING WITH CITY ENGINEER, CITY INSPECTOR AND CONSULTING ENGINEER PRIOR TO STARTING WORK. NO WORK IS TO BE PERFORMED UNTIL THIS MEETING IS COMPLETED AND A WRITTEN NOTICE TO PROCEED IS ISSUED BY THE CITY ENGINEER TO THE CONTRACTOR. MONTHLY CONSTRUCTION MEETINGS ON SITE DURING CONSTRUCTION ARE ALSO TO BE SCHEDULED WITH THE CITY ENGINEER AND INSPECTOR.

5. IN THE ABSENCE OF SPECIFIC REQUIREMENTS FOR ANY WORK, CONTRACTOR SHALL COORDINATE WITH CITY ENGINEER AND INSPECTOR. PROCEEDING WITHOUT PROPER DIRECTION FROM THESE PARTIES WILL BE AT THE CONTRACTORS SOLE RISK. CONTRACTORS ARE NOT TO PROCEED WITH ANY WORK WITHOUT PROPER AUTHORIZATION OF THE CITY ENGINEER'S OFFICE.

6. CONTRACTOR TO MAINTAIN SITE IN "FIRST CLASS" NEAT CONDITION. WORK SITE SHALL BE CLEANED UP AT END OF EACH DAY.

7. CONTRACTOR SHALL COORDINATE SEQUENCE OF CONSTRUCTION WITH CITY ENGINEER AND INSPECTOR & ADJUST TRAFFIC CONTROL SIGNS AS NECESSARY.

8. CONTRACTOR SHALL VERIFY LOCATION & DEPTH OF ALL EXISTING UTILITIES AND SERVICE LINES PRIOR TO EXCAVATING FOR UTILITY PLACEMENT. LOCATING METHODS INCLUDE, BUT ARE NOT LIMITED TO: LOCATING SERVICES, "POT HOLING" WITH WATER, SPOT DIGGING, ETC.

9. CONTRACTOR TO PROTECT UTILITIES FROM DAMAGE DURING CONSTRUCTION. CONTRACTOR SHALL REPAIR DAMAGES RESULTING FROM THEIR ACTIVITIES. COSTS FOR REPAIRS ARE THE RESPONSIBILITY OF THE CONTRACTOR.

10. CONTRACTOR SHALL NOTIFY THE CITY ENGINEER'S OFFICE IMMEDIATELY WHERE UNKNOWN UTILITIES ARE ENCOUNTERED IN CONSTRUCTION.

11. CONTRACTOR TO COORDINATE WORK WITH THE FOLLOWING UTILITY COMPANIES, AGENCIES, AND THE CITY:
WATER & SEWER . . . . . CITY OF BRYAN . . . . . (979)209-5900
GAS . . . . . DEVON GAS . . . . . (979)779-4460
ATMOS GAS . . . . . (979)774-2540/(979)255-4511
TELEPHONE . . . . . VERIZON . . . . . (800)344-8377
ELECTRIC. . . . . BTU . . . . . (979)821-5700
CABLE . . . . . SUDDENLINK . . . . . (979)693-8885
COMMUNICATIONS CABLE . . . . . AT&T . . . . . (800)245-4545

12. CONTRACTOR TO CONTACT UTILITY, PIPELINE COMPANIES FORTY-EIGHT (48) HOURS IN ADVANCE OF WORK IN THE VICINITY OF THEIR LINES. TEXAS ONE CALL SYSTEM IS REQUIRED.

13. CONTRACTOR TO MAINTAIN CLEARANCE OF ALL EXISTING UTILITIES AS REQUIRED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) AND THESE PLANS.

14. REMOVE AND DISPOSE OF ALL MATERIALS AND STRUCTURES THAT ARE TO BE DEMOLISHED AND NOT NOTED FOR SALVAGE TO CONTRACTOR DESIGNATED DISPOSAL AREA. EXISTING PAVEMENT, CURBS, VEGETATION, CULVERTS, GRAVEL ROADWAY AND DRAINAGE RELATED STRUCTURES WITHIN RIGHT-OF-WAY ARE TO BE REMOVED COMPLETELY. THIS WORK SHALL BE DONE IN ACCORDANCE W/TxDOT STANDARD SPECIFICATION 100 "PREPARING R.O.W."

15. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE TRAFFIC PLAN. PROVIDE PROPER SIGNING FOR CONSTRUCTION, SAFETY, AND ROUTING OF TRAFFIC. POSITIONING AND CONTENT OF SIGNS, BARRICADES AND FLAGGING SHALL BE IN ACCORDANCE WITH THE CURRENT TEXAS MUTCD.

16. CONTRACTOR TO PROVIDE BARRICADES, SIGNS, AND LIGHTING AROUND ALL OPEN CUTS ALONG STREETS IN ACCORDANCE WITH THE TEXAS MUTCD.

17. A FIELD SET OF AS-BUILT DRAWINGS SHALL BE MAINTAINED BY THE CONTRACTOR FOR TRANSFER TO PERMANENT RECORD DRAWINGS. THESE DRAWINGS SHALL INCLUDE MEASUREMENTS FROM EACH UNIT INSTALLED TO TWO PERMANENT OBJECTS. UTILITY SERVICE LOCATIONS SHOULD ALSO BE DOCUMENTED. AS-BUILTS ARE TO BE SUBMITTED TO DESIGN ENGINEER WITH FINAL PAY APPLICATION TO THE CITY ENGINEER. PROJECT WILL NOT BE CLOSED OUT UNTIL CONTRACTOR HAS PROVIDED THESE FIELD SET(S) TO THE CITY ENGINEER'S OFFICE.

18. CONTRACTOR TO STORE MATERIALS AT LOCATION(S) APPROVED BY & COORDINATED WITH THE OWNER. EQUIPMENT IS TO BE STORED OVERNIGHT AT LOCATIONS SO AS NOT TO BLOCK STREETS OR DRIVES. MATERIALS ARE TO BE PROTECTED FROM DAMAGE BY THE ELEMENTS.

19. CONTRACTOR TO MAINTAIN ADEQUATE SITE DRAINAGE FACILITIES AS REQUIRED DURING CONSTRUCTION. PROTECT EXCAVATIONS FROM FLOODING DUE TO GROUNDWATER INFILTRATION AND RUN-OFF. INSURE THAT NO DRAINAGE ON OR OFF THE SITE IS BLOCKED BY PROPOSED CONSTRUCTION.

20. CONSTRUCTION AREAS ARE TO BE CLEARED/GRUBBED COMPLETELY OF TREES, BRUSH, STUMPS, ROOTS, PIPES, PAVEMENT AND ALL RUBBISH. COST OF CLEARING TO COMPLETE ALL IMPROVEMENTS TO BE INCLUDED IN BID TO THE CITY.

21. CONTRACTOR TO BE RESPONSIBLE FOR STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND EROSION CONTROL DURING AND AFTER CONSTRUCTION. CONTRACTOR SHALL INSTALL EROSION AND SILT CONTROL MEASURES AS REQUIRED DURING CONSTRUCTION AND SHALL REMOVE TEMPORARY MEASURES WHEN PERMANENT COVER IS ESTABLISHED. SILT FENCING IS TO BE PLACED DOWNSTREAM OF THE PROJECT TO KEEP SILT OFF OF PRIVATE PROPERTY. OTHER LOCATIONS MAY BE REQUIRED TO HAVE SILT FENCING. CONTRACTOR IS TO COORDINATE W/ CITY INSPECTOR.

22. CONTRACTOR IS RESPONSIBLE FOR O.S.H.A. ESTABLISHED TRENCH SAFETY AS DESCRIBED IN THE FEDERAL REGISTER 29 CFR PART 1926 FOR EXCAVATION EXCEEDING 5'. A TRENCH SAFETY PLAN SHOULD BE PREPARED AND A "COMPETENT PERSON" APPOINTED PRIOR TO ANY AND ALL EXCAVATING OPERATIONS EXCEEDING 5' DEPTH. THE PLAN IS TO BE PREPARED AND SEALED BY A REGISTERED TEXAS PROFESSIONAL ENGINEER AND SHALL BE SUBMITTED TO THE CITY OF BRYAN PRIOR TO ANY EXCAVATION ON THE PROJECT. A BID ITEM IS PROVIDED FOR TRENCH SAFETY AND CONFINED SPACE PLAN.

23. EXISTING GRADES SHALL BE RE-ATTAINED AND PROPOSED GRADES SHALL BE ATTAINED BY SHAPING BACKFILL MATERIAL BY CUT AND FILL OPERATIONS. FILL OPERATIONS ARE TO BE ACCOMPLISHED BY PLACING MATERIAL IN 6-INCH (LOOSE MEASURE) LIFTS AND 98% DENSITY AS DETERMINED BY ASTM D698 (STANDARD PROCTOR), AS NOTED IN DETAILS. CONTRACTORS (BIDDERS) ARE TO PERFORM THEIR OWN QUANTITIES DETERMINATION PRIOR TO BIDDING. ALL EARTHWORK TO BE INCLUDED IN BID.

24. SELECT BORROW MATERIAL SHALL HAVE A PLASTICITY INDEX (PI) OF 4 TO 15 UNLESS NOTED OTHERWISE BY THE GEOTECHNICAL REPORT

25. CONTRACTORS ARE TO COORDINATE THE HOLDING/SUPPORT OF UTILITY POLES WHERE NECESSARY TO FACILITATE CONSTRUCTION. ALL COORDINATION WITH UTILITY COMPANIES IS TO BE INCLUDED WITH BID ITEMS FOR WORK TO BE PERFORMED.

26. CULVERTS DISTURBED/DAMAGED BY CONSTRUCTION ARE TO BE RESET/REPLACED AT NO ADDITIONAL COST.

27. ALL EARTHENED AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE REGRADED. HYDROMULCHING IS REQUIRED IN ALL AREAS DISTURBED BY PROJECT EXCEPT WHERE SOLID SOD IS SPECIFIED. THIS WORK SHALL BE DONE AS OUTLINED IN THE SPECIFICATION.

28. CONTRACTOR TO VERIFY COORDINATE POINTS AND BENCH MARKS PRIOR TO COMMENCING WORK.

29. FIELD LOCATE ALL SERVICE LINES PRIOR TO CONSTRUCTION. REPORT DISCREPANCIES TO INSPECTOR & CONSULTING ENGINEER. ADJUSTMENTS MAY BE REQUIRED.

30. CONCRETE DESIGN, MATERIALS, AND WORKMANSHIP TO CONFORM TO THE CURRENT EDITION OF THE FOLLOWING STANDARDS UNLESS OTHERWISE MODIFIED ON THE DRAWINGS IN THE SPECIFICATIONS:
ACI 318-02 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE"
ACI 315-99 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT"
NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

31. THE FOLLOWING CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL, UNLESS OTHERWISE SHOWN:
3" - CONCRETE CAST DIRECTLY AGAINST THE GROUND
2" - FORMED SURFACES OR TOP OF FINISHED SURFACES

32. LAP REINFORCING STEEL IN ACCORDANCE WITH ACI 318-02 (CLASS B).

33. EXCESS DIRT FROM ROADWAY SHALL BE DISPOSED OF BY THE CONTRACTOR.

34. FINISHED GRADES TO BE SLOPED TO PROVIDE PROPER DRAINAGE.

35. STREET CONSTRUCTION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE CITY OF BRYAN AND THESE SPECIFICATIONS/PLANS.

36. PAVEMENT TIE-INS TO EXISTING PAVEMENT TO BE SUBSIDIARY TO THE PERTINENT BID ITEMS.

37. COORDINATE CONSTRUCTION CLOSELY WITH CITY TO ASSURE NO CONFLICTS BETWEEN GRADING, DRAINAGE AND PAVING IMPROVEMENTS.

38. PROPOSED PAVEMENT ELEVATIONS SHOWN ARE TOP OF FINISHED PAVEMENT (TP), OR CURB (TC) AS NOTED. PROPOSED FLOWLINE ELEVATIONS ARE NOTED (FL). PROPOSED TOP OF WALL ELEVATIONS ARE NOTED (TW).

39. PROVIDE EXPANSION JOINTS AND CONTROL JOINTS IN ACCORDANCE WITH CITY OF BRYAN STANDARD SPECIFICATION AND DETAILS.

40. ALL FORMS MUST BE WELL STAKED AND THOROUGHLY BRACED SO THAT TAMPING OF MATERIALS WILL NOT DISTURB THEM OR MOVE THEM OUT OF LINE.

41. CARE MUST BE TAKEN THAT THE CURB AND GUTTER SHALL NOT SHOW TROWEL MARKS, HIGH SPOTS, SAGS OR HORIZONTAL DEFLECTIONS AND ANY SECTION SHOWING SAME AFTER BEING FINISHED WILL BE CONDEMNED BY THE CITY OF BRYAN AND MUST BE REPLACED BY THE CONTRACTOR.

42. THE COMPLETED CONCRETE PAVEMENT SHALL BE CURED BY A METHOD APPROVED BY THE CITY OF BRYAN. LIQUID MEMBRANE CURING COMPOUND WHICH COMPLIES WITH THE "STANDARD SPECIFICATIONS FOR LIQUID MEMBRANE FORMING COMPOUNDS FOR CURING CONCRETE", ASTM C309 TYPE 2 WHITE PIGMENTED MAY BE USED.

43. CUT/FILL SHEETS ARE REQUIRED. CONTRACTOR IS TO HAVE CUT/FILL SHEETS PREPARED AND SEALED BY A REGISTERED PUBLIC LAND SURVEYOR (RPLS) OR A TEXAS PROFESSIONAL ENGINEER (P.E.) CONSTRUCTION IS NOT TO BEGIN UNTIL FINAL CUT SHEETS HAVE BEEN SUBMITTED TO INSPECTOR.

44. CONTRACTOR SHALL REMOVE & DISPOSE OF ALL EXISTING VALVES & WATER SYSTEM APPURTENCES AND/OR ABANDONED DUE TO NEW SYSTEM. COORDINATE & VERIFY WITH INSPECTOR AND WATER SERVICES PERSONNEL PRIOR TO REMOVAL.

GENERAL NOTES N.T.S. 9

45. CONTRACTOR SHALL PROVIDE MEANS FOR TESTING, FLUSHING, & RELATED ITEMS FOR PROJECT. COST ARE INCEDENTAL & SHOULD BE INCLUDED IN RELATED BID ITEMS.

46. PRIVATE WATER SERVICES & SANITARY SEWER SERVICES SHALL BE PERFORMED BY A LISCENSED PLUMBER. PRIVATE WATER SERVICE IS ALL ITEMS ON THE CUSTOMER SIDE OF THE METER. PRIVATE SANITARY SEWER INCLUDES ANY CONNECTION TO PRIVATE PLUMBING & ANYTHING WITHIN 5' OFF THE STRUCTURE.

47. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLAN TO CITY AND PROJECT MANAGER IN ACCORDANCE WITH THE FOLLOWING GUIDELINE:

- TRAFFIC CONTROL TO BE IN ACCORDANCE W/ TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) (LATEST EDITION).
- CENTER TURN LANE AND ONE LANE OF TRAFFIC, EACH DIRECTION MAY BE CLOSED FOR WORK ON VILLA MARIA,
- DRIVEWAY AND NEW SIGNALS SHALL BE IN PLACE AND OPERATIONAL PRIOR TO MEDIAN CONSTRUCTION.
- PAVEMENT MARKINGS SHALL BE COMPLETE ON VILLA MARIA DRIVE FOR THE ROADWAY PORTION, NORTH OF THE CRESTVIEW DRIVE/JOSPEH DRIVE INTERSECTION PRIOR TO OPENING NEW INTERSECTION & PUTTING NEW SIGNAL IN OPERATION.
- AN INITIAL TRAFFIC CONTROL PLAN IS INCLUDED. MODIFICATIONS & ADJUSTMENTS SHALL BE SUBMITTED TO INSPECTOR & CITY ENGINEER.

GENERAL NOTES CONTINUED N.T.S. 8

1. UTILITY CONSTRUCTION AND MATERIALS SHALL MEET THE REQUIREMENTS OF THESE PLANS, JOINT BRYAN/COLLEGE STATION DESIGN GUIDELINES, SPECIFICATIONS AND DETAILS AND TCEQ.

2. CONTRACTOR AND HIS SUPPLIER TO SUPPLY & INSTALL FITTINGS AS DESIGNED. ANY ADDITIONAL FITTING REQUIRED BUT NOT NOTED ON PLANS BUT NECESSARY FOR CONSTRUCTION WILL BE CONSIDERED SUBSIDIARY. CONTRACTOR TO MAKE THEIR OWN DETERMINATION FOR SUBSIDIARY ITEMS. COST TO BE INCLUDED IN PIPE BIDS.

3. CONTRACTOR IS TO COORDINATE BACKFILLING OF ALL ITEMS TO BE CONSTRUCTED WITH THE CITY OF BRYAN ENGINEERING DEPARTMENT. ALL UTILITIES TO BE TESTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS. TESTS TO BE COORDINATED WITH & WITNESSED BY THE CITY INSPECTOR.

4. EMBEDMENT REQUIREMENTS NOTED ON THESE PLANS ARE TO BE STRICTLY ADHERED TO.

5. CONTRACTOR SHALL COORDINATE ALL MAIN AND SERVICE CONNECTIONS WITH THE CITY OF BRYAN AND INDIVIDUAL PROPERTY OWNERS (WHERE NECESSARY). CONTRACTOR WILL GIVE 72 HOUR NOTICE TO CUSTOMERS FOR INTERRUPTION IN WATER SERVICE.

6. SANITARY SEWER GRAVITY LINE TO BE SDR 26 (HEAVY WALL) PVC AND CONFORM TO ASTM D2241 (AS APPROVED BY THE CITY OF BRYAN). SEPARATION REQUIREMENT TO ADHERE TO ITCEQ (RE:DETAIL).

7. PIPE 6" AND 8" IN DIAMETER TO BE C-900 PVC. SERVICE LINES SHALL BE 1" OR 1-1/2" COPPER. PVC PIPE JOINTS TO HAVE SINGLE GASKET BELL TYPE JOINTS. PROVIDE 48" MINIMUM COVER FOR WATERLINES UNLESS NOTED. REFER TO CITY TECHNICAL SPECIFICATIONS.

8. GATE VALVES TO BE SAME SIZE AS LINE IN WHICH INSTALLED UNLESS NOTED. PROVIDE IRON BODIED RESILIENT SEAT GATE VALVES.

9. FITTINGS TO BE DUCTILE IRON CONFORMING TO AWWA C110 AND ANSI A21 10 FOR 2 INCHES IN DIAMETER AND LARGER. REFER TO CITY TECHNICAL SPECIFICATIONS.

10. NOTIFY PROPERTY OWNERS 72 HOURS IN ADVANCE OF INTERRUPTION OF WATER SERVICES. WATER SERVICES SHALL NOT BE INTERRUPTED TO ANY RESIDENCE OR BUSINESS FOR LONGER THAN A SIX HOUR PERIOD.

11. CITY WILL SHUT OFF WATER ONLY IF ABSOLUTELY NECESSARY FOR CONTRACTOR TO MAKE TIE-INS. CONTRACTOR WILL GIVE 72 HOUR NOTICE TO CITY. CLOSE COORDINATION IS REQUIRED TO ALLOW CITY SUFFICIENT TIME TO NOTIFY CUSTOMERS WATER WILL BE SHUT-OFF. CITY WILL SHUT WATER OFF ONLY ONCE. CONTRACTOR TO HAVE SUFFICIENT STAFF AND ALL REQUIRED MATERIALS ON SITE PRIOR TO BEGINNING OF WORK AND SYSTEM SHUT DOWN. ALL TIE-INS ARE TO BE COMPLETED WITHIN A 6 HOUR PERIOD.

12. ALL NECESSARY ADJUSTMENTS TO UTLITY RELATED ITEMS (IE: WATER METERS, VALVE BOXES, GAS METERS, MONITORING WELLS, MANHOLES, ETC.) ARE TO BE SUBSIDIARY. COSTS TO BE INCLUDED IN BID.

13. CONTRACTOR IS RESPONSIBLE FOR FINDING ALL SANITARY SEWER SERVICES. PRELIMINARY INVESTIGATION WILL ALSO CONFIRM ADDITIONAL SERVICES THAT ARE NECESSARY WHICH ARE NOT SHOWN IN PLANS.

14. VERIFY LOCATION AND GRADE OF SANITARY SEWER TIE-INS PRIOR TO CONSTRUCTION.

15. A LICENSED PLUMBER IS REQUIRED FOR ALL WORK RELATED TO WATER AND SANITARY SEWER SERVICES THAT IS ON PRIVATE PROPERTY.

16. ALL MANHOLES ARE TO BE ADJUSTED FOR TEMPORARY & FINAL GRADES SO THAT TRAFFIC CAN PASS DURING ALL PHASES OF CONSTRUCTION. COSTS SHALL BE INCLUDED IN MANHOLE BIDS.

17. CONTRACTOR TO LOCATE ALL INTERCONNECT LOCATIONS PRIOR TO CONSTRUCTION. LINES TO BE CUT, DISCONNECTED & CAPPED AS NOTED IN PLANS.

18. ALL WATER METER BOXES AND TOPS ARE TO BE REMOVED & DISPOSED OF. NEW METER BOXES AND TOPS ARE TO BE FURNISHED & INSTALLED BY CONTRACTOR.

UTILITY NOTES N.T.S. 7

1. DESIGN, MATERIALS AND WORKMANSHIP TO CONFORM WITH THE CURRENT EDITION OF THE FOLLOWING STANDARDS UNLESS OTHERWISE MODIFIED ON THE DRAWINGS OR IN THE SPECIFICATIONS:
ACI 318-77 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE"
ACI 315-74 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES"
ACI 315-99 DETAILS & DETAILING OF CONCRETE REINFORCEMENT NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

2. MATERIALS TO BE AS FOLLOWS:
CONCRETE.....3,500 PSI COMPRESSIVE STRENGTH AT 28 DAYS WITH 5-SACK MIX AND 5-INCH MAX. SLUMP
REINFORCING STEEL.....ASTM A615, GRADE 60 DEFORMED BARS

3. CONCRETE SHALL BE WELL CONSOLIDATED. TAKE SPECIAL CARE TO ENSURE FULL CONSOLIDATION AROUND ANCHOR BOLTS AND EMBEDDED ITEMS.

4. SUPPORT BARS SECURELY TO PREVENT BOTH VERTICAL AND HORIZONTAL MOVEMENT DURING PLACING OF CONCRETE.

5. LAP ALL REINFORCING BARS 45 DIAMETERS INCLUDING CORNERS AND TEES.

6. FINISHED GRADES TO BE SLOPED TO PROVIDE PROPER DRAINAGE.

7. COORDINATE CONSTRUCTION CLOSELY WITH UTILITY CONTRACTOR(S) TO ASSURE NO CONFLICTS BETWEEN WATER, SEWER, ELECTRICAL, TECHNICAL SERVICES, GAS, GRADING, DRAINAGE AND PAVING IMPROVEMENTS.

8. ALL FORMS MUST BE WELL STAKED AND THOROUGHLY BRACED SO THAT TAMPING OF MATERIALS WILL NOT DISTURB THEM OR MOVE THEM OUT OF LINE.

9. JOINT LAYOUT IS PROVIDED ON SHEET C1.2.

10. MAXIMUM PAVING EXPANSION JOINT SPACING SHALL BE 40 FEET MAXIMUM CONSTRUCTION/CONTROL JOINT SPACING SHALL BE 10 FEET. JOINTS SHALL BE CONTINUOUS THROUGH CURB OR SIDEWALK ADJACENT TO PAVEMENT. CONTRACTOR SHALL SUBMIT PROPOSED JOINT LAYOUT FOR APPROVAL PRIOR TO CONSTRUCTION.

PAVING NOTES N.T.S. 6

Bench Mark List

NO.	DESCRIPTION	BEARING	ELEVATION
BM# 7113	SQUARE IN CONCRETE ON THE NORTHEAST CORNER OF CURB INLET APPROXIMATELY 671.5' SOUTH OF THE POWER POLE ON THE EAST SIDE OF VILLA MARIA ROAD AT THE JOSEPH DRIVE INTERSECTION, AND APPROXIMATELY 352.3' SOUTH OF THE STORM MANHOLE AT THE CRESTVIEW ENTRANCE.	N 383348.8760 E 3252657.1300	327.77
BM# 7852	SQUARE IN CONCRETE ON THE SOUTHEAST CORNER OF CURB INLET APPROXIMATELY 121.7' SOUTH OF THE POWER POLE, AND APPROXIMATELY 64.6' SOUTHWEST OF THE CROSSWALK POST ON THE EAST SIDE OF VILLA MARIA ROAD AT THE JOSEPH DRIVE INTERSECTION	N 383898.3127 E 3252677.5119	318.85

Control Point List

NO.	DESCRIPTION	BEARING	ELEVATION
CP# 503	1/2" IRON ROD ON THE EAST SIDE OF VILLA MARIA ROAD APPROXIMATELY 6.6' NORTHEAST OF THE STORM SEWER MANHOLE 137' NORTH OF THE JOSEPH DRIVE AND VILLA MARIA ROAD INTERSECTION.	N 384131.7640 E 3252686.5641	315.91
CP# 7569	"X" IN CONCRETE CURB APPROXIMATELY 64.5' NORTHEAST OF THE CROSSWALK POLE, AND APPROXIMATELY 71.8' SOUTHEAST OF THE TRAFFIC SIGNAL POLE ON THE EAST SIDE OF VILLA MARIA ROAD AT THE JOSEPH DRIVE INTERSECTION.	N 383977.4337 E 3252752.7931	323.47

BENCH MARK/CONTROL POINT LIST N.T.S. 5

TEXAS ONE CALL SYSTEM
1-800-245-4545
STOP-CALL BEFORE YOU DIG!

NOTE: CONTRACTOR SHALL NOTIFY ONE CALL SYSTEM AND SHALL NOTIFY ANY OTHER UTILITIES WHICH ARE SUSPECTED IN THE PROJECT AREA WHO MAY NOT SUBSCRIBE TO THE TEXAS ONE CALL SYSTEM.

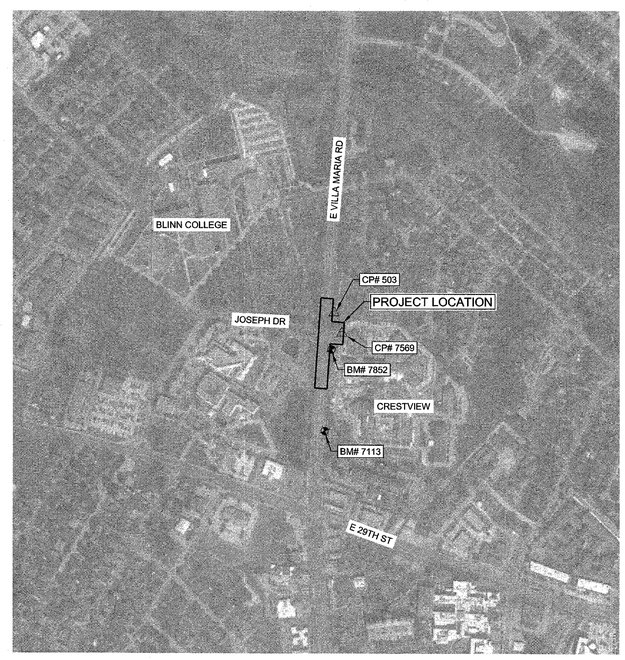
UTILITY LOCATOR SERVICE N.T.S. 4

Existing Legend 3

- 250 — EXISTING CONTOUR LINE
- W — EXISTING WATER LINE (SIZE SHOWN)
- UGE — EXISTING UNDERGROUND ELECTRIC LINE
- E — EXISTING ELECTRIC LINE
- EDGE OF ASPHALT PAVEMENT
- WV — EXISTING WATER VALVE
- WM — EXISTING WATER METER
- S — EXISTING STORM DRAIN MANHOLE
- TPED — EXISTING TELEPHONE PEDESTAL
- PP — EXISTING POWER POLE
- EM — EXISTING ELECTRIC METER
- EXISTING GUY WIRE
- EXISTING TREE

Proposed Legend 2

- 100 — PROPOSED SIGN
- PROPOSED CONTOURS
- PROPOSED DRAINAGE FLOW DIRECTION
- SF — PROPOSED SILT FENCE
- T=100.00 — TOP OF FINISHED CURB
- P=100.00 — TOP OF FINISHED PAVEMENT
- G=100.00 — TOP OF FINISHED GROUND
- CONCRETE SIDEWALK
- CONCRETE PAVEMENT
- BLOCK SOD



VICINITY MAP N.T.S. 1

NO.	DATE	ISSUED FOR
1	06-19-14	Preliminary Design
2	07-02-14	Bid
3	----	----
4	----	----

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DRAWN BY: DKE | APPV'D BY: JJR | PLOT SCALE: 1:1

TBPE FIRM REGISTRATION: #413
TBPLS FIRM REGISTRATION: #10110901

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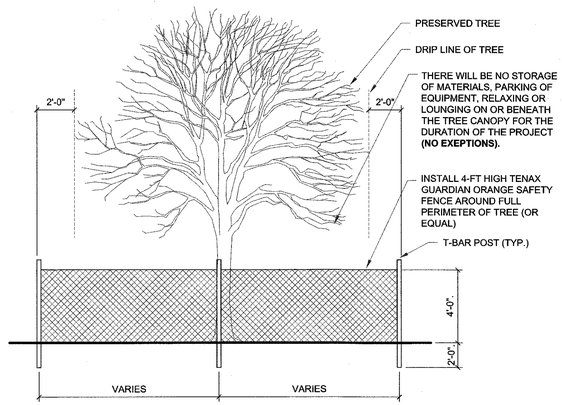
4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 (979) 776-9700

STATE OF TEXAS
JOHN RUSK
87884
LICENSED PROFESSIONAL ENGINEER
7/1/2014

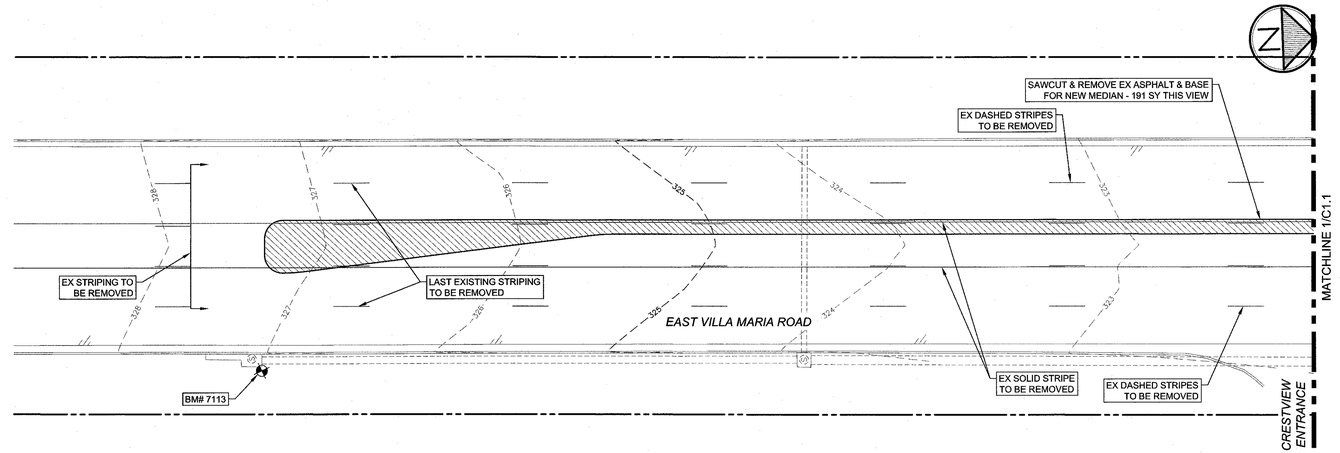
Villa Maria/Joseph Dr. Signal & Roadway Improvements
City of Bryan
Bryan, Texas
Project Notes & Information

CONTRACT NO. 600079

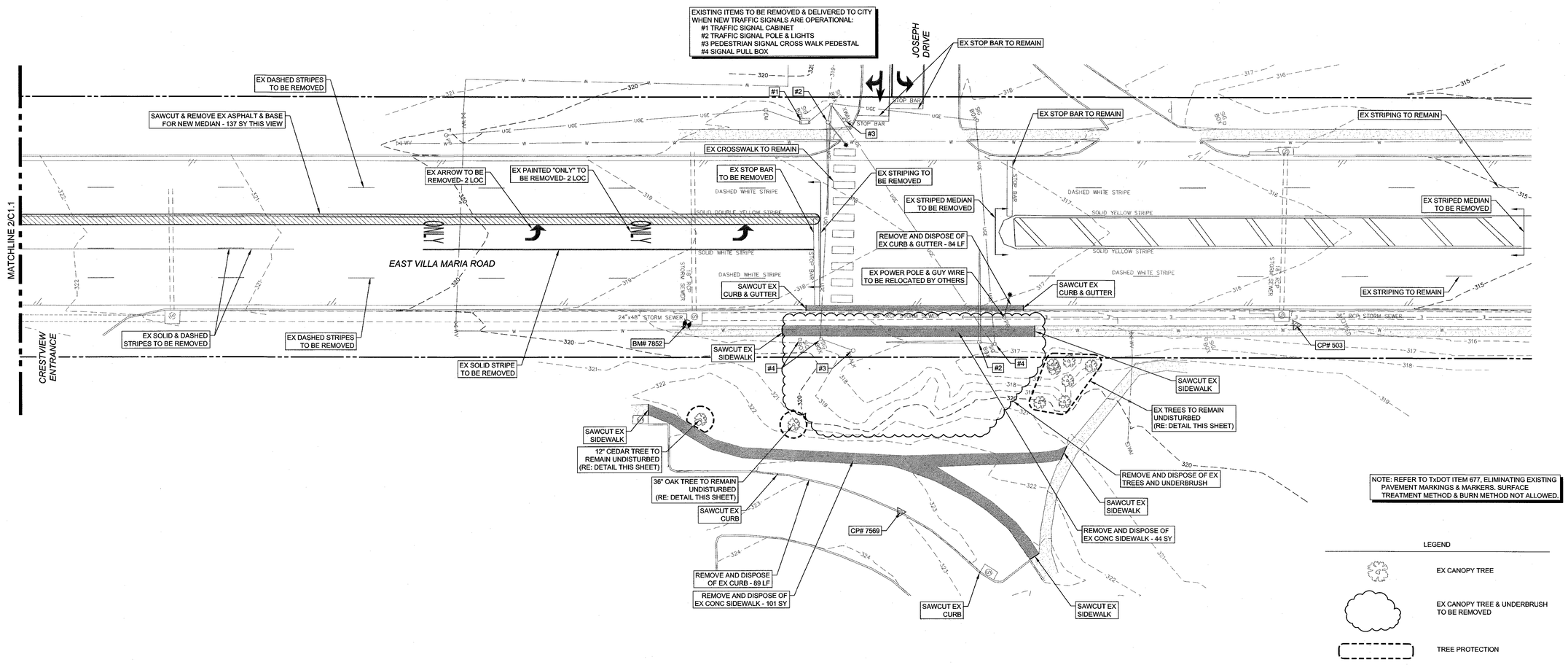
SHEET NO.
C1.0



Tree Protection Detail N.T.S. 3



Existing Conditions and Demolition Plan 1"=20'-0" 2



Existing Conditions and Demolition Plan 1"=20'-0" 1

NO.	DATE	ISSUED FOR
1	06-19-14	Preliminary Design
2	07-02-14	Bid
3	----	----
4	----	----

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DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JIR	1:1

TBPE FIRM REGISTRATION: #413
TBPLS FIRM REGISTRATION: #10110901

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4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700

STATE OF TEXAS
JOHN RUSK
87884
LICENSED PROFESSIONAL ENGINEER
7/1/2014

Villa Maria/Joseph Dr. Signal & Roadway Improvements
City of Bryan
Bryan, Texas
Existing Conditions & Demolition Plan

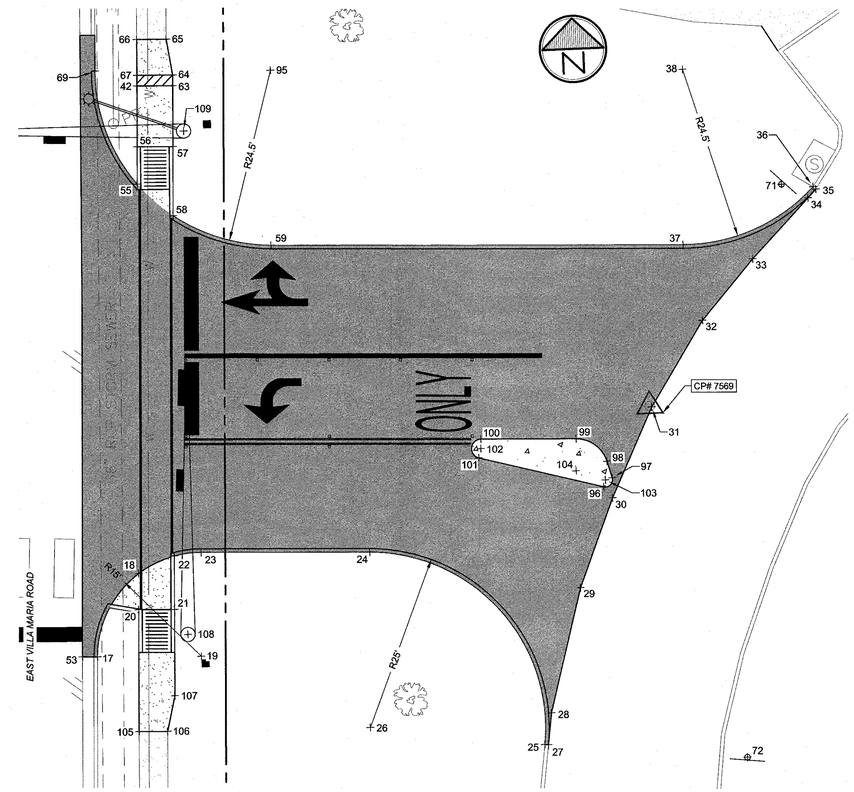
CONTRACT NO. 600079

SHEET NO.
C1.1

CORRDINATE TABLE			
NO	DESCRIPTION	Northing	Easting
1	RAISED MEDIAN	383350.8797	3252624.8086
2	RAISED MEDIAN	383355.6925	3252629.9892
3	RADIUS OF CURVE	383355.8763	3252624.9926
4	RAISED MEDIAN	383361.9043	3252629.8319
5	LAY DOWN CURB	383685.1278	3252631.3617
6	RADIUS OF CURVE	383357.5351	3252580.0232
7	RAISED MEDIAN	383442.0619	3252622.8005
8	RAISED MEDIAN	383448.2708	3252622.6430
9	RADIUS OF CURVE	383446.4311	3252672.6092
10	RASIED MEDIAN	383948.6793	3252641.0630
11	RASIED MEDIAN	383948.8265	3252637.0657
12	RADIUS OF CURVE/SIGN	383948.7529	3252639.0644
13	LAY DOWN CURB	383625.3155	3252625.1573
14	RAISED MEDIAN	383356.2348	3252615.2525
15	RAISED MEDIAN	383351.0543	3252620.0652
16	RADIUS OF CURVE	383356.0509	3252620.2491
17	BACK OF CURB	383945.5319	3252674.2365
18	BACK OF CURB	383956.8920	3252680.4583
19	RADIUS OF CURVE	383944.9800	3252688.7260
20	BACK OF CURB	383951.8582	3252680.2635
21	BACK OF CURB	383951.6648	3252685.2598
22	BACK OF CURB	383959.1276	3252685.5486
23	BACK OF CURB	383959.4692	3252689.2867
24	BACK OF CURB	383958.5583	3252712.8229

CORRDINATE TABLE			
NO	DESCRIPTION	Northing	Easting
25	BACK OF CURB	383930.7562	3252736.1494
26	RADIUS OF CURVE	383934.0767	3252711.8755
27	EDGE OF PAVEMENT	383930.6884	3252736.6448
28	EDGE OF PAVEMENT	383935.1357	3252737.2532
29	EDGE OF PAVEMENT	383952.4290	3252742.0471
30	EDGE OF PAVEMENT	383984.7775	3252747.0435
31	EDGE OF PAVEMENT	383977.2638	3252753.0496
32	EDGE OF PAVEMENT	383989.0968	3252760.6560
33	EDGE OF PAVEMENT	383997.4190	3252768.0202
34	EDGE OF PAVEMENT	384005.6591	3252776.0757
35	EDGE OF PAVEMENT	384006.8322	3252777.2226
36	BACK OF CURB	384007.1817	3252776.8650
37	BACK OF CURB	383999.8268	3252758.3984
38	RADIUS OF CURVE	384024.3085	3252759.3458
42	SIDEWALK TRENCH DRAIN	384025.0975	3252683.0978
53	EDGE OF PAVEMENT	383945.6177	3252672.1482
55	BACK OF CURB	384011.3646	3252682.5663
56	BACK OF CURB	384016.6039	3252682.7691
57	BACK OF CURB	384016.4105	3252687.7654
58	BACK OF CURB	384006.7239	3252687.3905
59	BACK OF CURB	384002.0536	3252700.8570
63	SIDEWALK TRENCH DRAIN	384024.9051	3252688.0683
64	SIDEWALK TRENCH DRAIN	384026.4040	3252688.1263
65	SIDEWALK	384031.4345	3252687.4362

CORRDINATE TABLE			
NO	DESCRIPTION	Northing	Easting
66	SIDEWALK	384031.5936	3252683.3251
67	SIDEWALK TRENCH DRAIN	384026.5964	3252683.1558
69	BACK OF CURB	384027.4436	3252677.3212
71	SIGN	384007.6875	3252772.4502
72	SIGN	383927.8024	3252764.3334
95	RADIUS OF CURVE	384026.5353	3252701.8044
96	RAISED ISLAND	383966.3639	3252745.8969
97	RAISED ISLAND	383967.5881	3252747.1281
98	RAISED ISLAND	383969.9324	3252746.4966
99	RAISED ISLAND	383973.2585	3252742.3255
100	RAISED ISLAND	383973.7726	3252729.0408
101	RAISED ISLAND	383971.1221	3252728.6300
102	RADIUS OF CURVE	383972.4236	3252728.9886
103	RADIUS OF CURVE	383967.3280	3252746.1626
104	RADIUS OF CURVE	383968.7618	3252742.1515
105	SIDEWALK	383934.8251	3252679.6044
106	SIDEWALK	383934.6714	3252683.5758
107	SIDEWALK	383939.6280	3252684.7940
108	TRAFFIC SIGNAL	383948.0953	3252686.9887
109	TRAFFIC SIGNAL	384018.5147	3252689.3414
110	TRAFFIC SIGNAL	383952.8656	3252602.6037
111	TRAFFIC SIGNAL	384015.4174	3252605.8478



NO.	DATE	ISSUED FOR
1	06-19-14	Review
2	07-02-14	Bid
3	----	----
4	----	----

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DKE	JIR	1:1

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STATE OF TEXAS
JOHN RUSK
87884
LICENSED PROFESSIONAL ENGINEER
7/1/2014

Villa Maria/Joseph Dr. Signal & Roadway Improvements

City of Bryan
Bryan, Texas
Project Layout

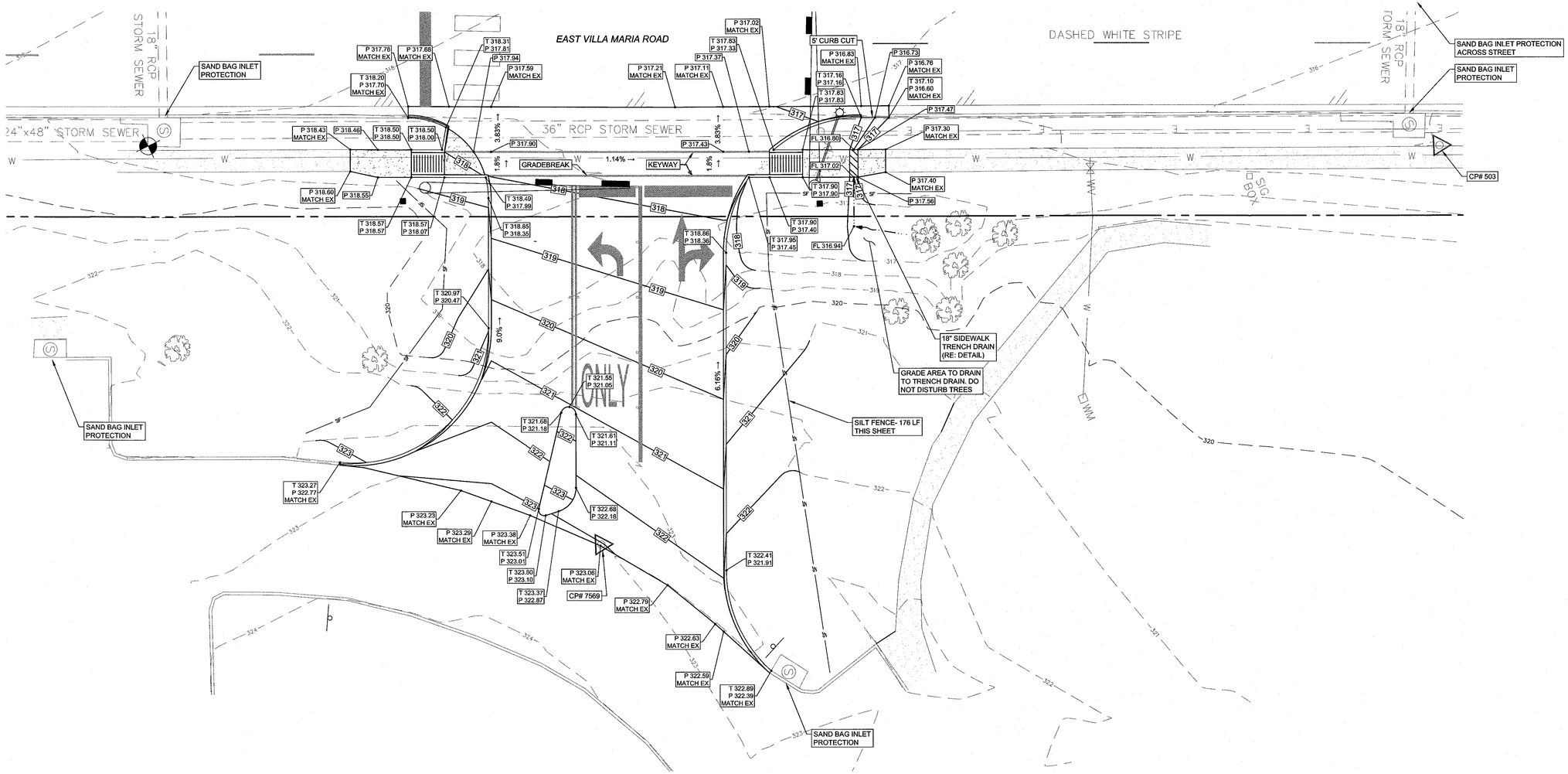
CONTRACT NO. 600079

SHEET NO.

C1.3

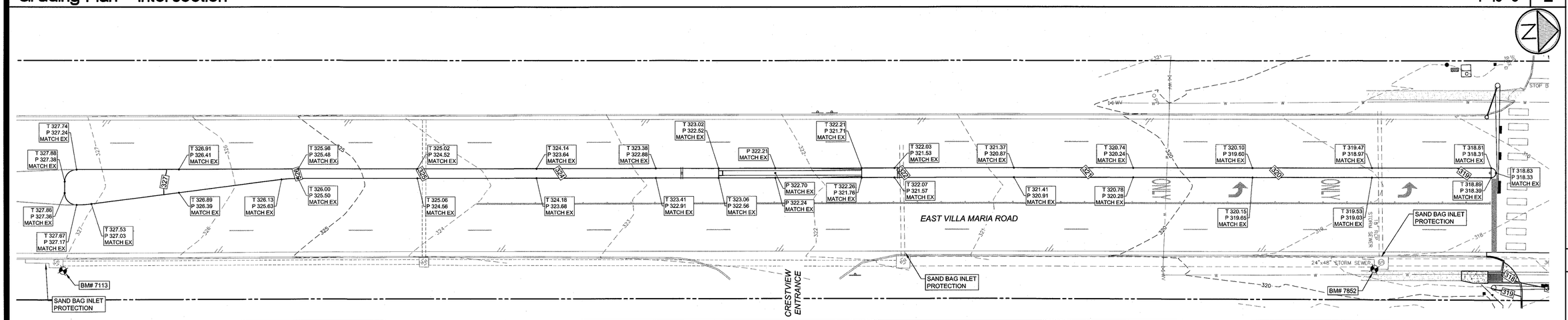
Project Layout

1"=10'-0"



Grading Plan - Intersection

1"=10'-0" | 2



Grading Plan - Median

1"=20'-0" | 1

NO.	DATE	ISSUED FOR
1	06-19-14	Preliminary Design
2	07-02-14	Bid
3	----	----
4	----	----

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STATE OF TEXAS
JOHN RUSK
87884
LICENSED PROFESSIONAL ENGINEER
7/1/2014

Villa Maria/Joseph Dr. Signal & Roadway Improvements

City of Bryan
Bryan, Texas

Grading Plan

CONTRACT NO. 600079

SHEET NO.

C1.4

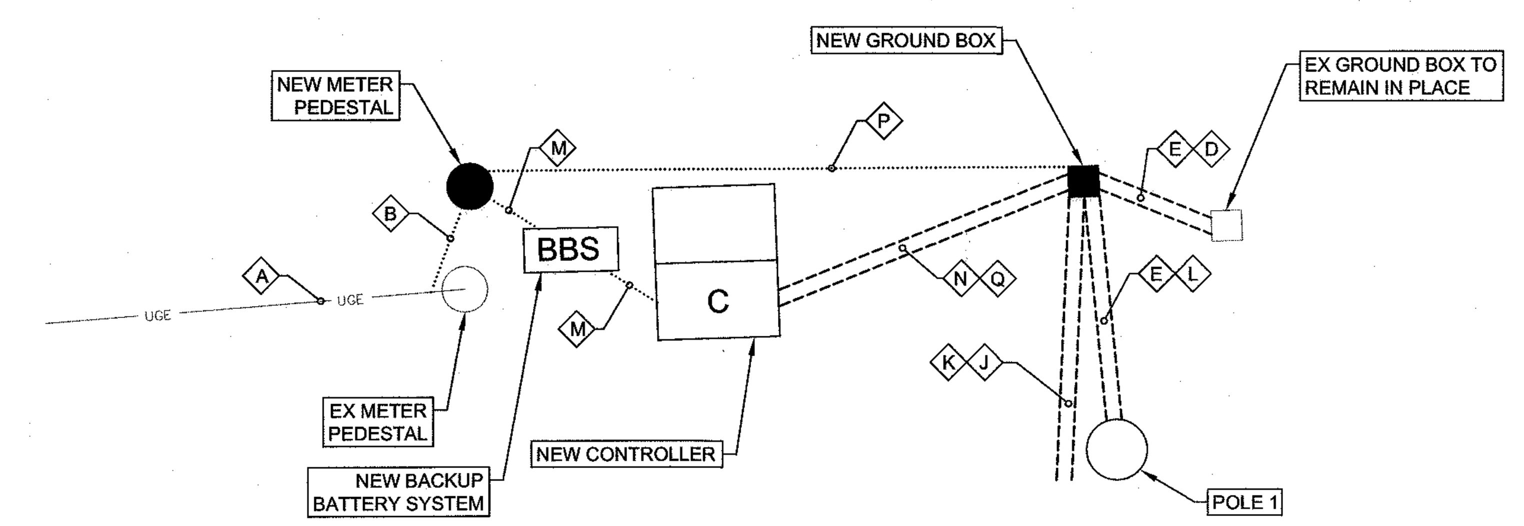
GENERAL NOTES:

1. Location of signal poles, controller, and ground boxes shall be staked by the Contractor and approved by the Engineer before excavation.
2. All conduits and fittings shall be made from PVC Schedule 40, gray in color, except as specified in Special Notes and as shown on plans.
3. Locations of underground utilities are based on the most accurate information available. Contractor shall be responsible for locating all utilities in the way of construction, whether or not shown on plans.
4. Locations of existing underground conduits relative to existing traffic signal installation are based on the most accurate information available. Contractor shall be responsible for locating all underground conduit locations before excavating.
5. Existing traffic signal installation shall remain operational during the construction of the new traffic signal installation. City shall provide a generator to continue operation of the existing traffic signals while Contractor installs power to new traffic signal controller.
6. All construction signs and barricades shall conform to the 2011 Texas Manual on Uniform Traffic Control Devices.
7. The Contractor shall replace all curbs, pavement, or sidewalks damaged by his forces during construction. Such repair shall be considered incidental to this project and shall not be considered as an additional cost to the City of Bryan.
8. At least 48 hours before drilling for pole foundations or beginning trenching or boring operations, the Contractor shall notify the following:

City Engineering Office	**(979) 209-5030**
BTU	**(979) 821-5770**
City Water/Wastewater	**(979) 209-5900**
Verizon Southwest	**(800) 344-8377**
Atmos Energy	**(979) 774-2506**
Suddenlink Cable	**(979) 595-2429**

SPECIAL NOTES:

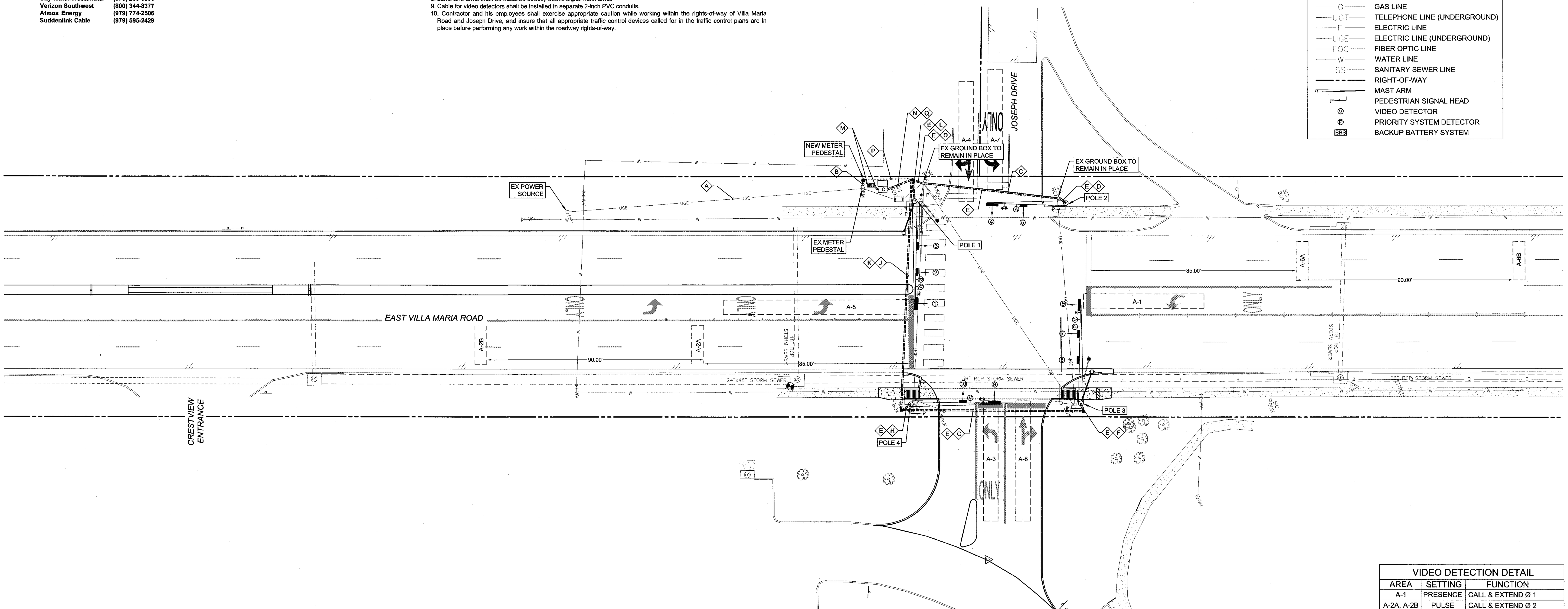
1. Contractor shall supply and install all new permanent signs.
2. After the new signal installation is complete, all signal heads shall remain bagged or turned down until City authorizes signal turn-on.
3. Power source to existing traffic signal operation is located on utility pole located south of the intersection of Villa Maria Road and Joseph Drive. Contractor shall install a new power cable from power source using existing conduit from power source to existing meter pedestal. Contractor shall coordinate power installation with BTU and obtain necessary permits. Contractor shall install new elbow on conduit underground and south of existing meter pedestal to route power cable to new meter pedestal. Contractor shall install new rigid metal conduit from new elbow to new meter pedestal. All other new conduit shall be PVC Schedule 40, as shown on the plans.
4. Contractor shall use existing ground boxes on northwest and southwest corners of the intersection of Villa Maria Road and Joseph Drive and existing rigid metal conduit between those two ground boxes. All other ground boxes shall be new.
5. After signal turn-on, Contractor shall remove existing signal poles, mast arms, signal heads, controller, and controller cabinet and deliver these items to a location within the City of Bryan as specified by the Engineer. Contractor shall remove and dispose of all existing and unnecessary ground boxes and the controller foundation. Topsoil shall be placed over the areas where these items were removed to bring areas to normal ground level. Concrete foundations for existing signal poles and pedestrian poles shall be removed to a level of 24 inches below normal ground level. Topsoil shall be used to fill in holes from the foundations to normal ground level and compacted to the satisfaction of the Engineer.
6. All signal lenses shall be L.E.D.
7. Contractor shall install confirmation lights on all signal poles.
8. Luminaire arms shall be installed directly above signal mast arms.
9. Cable for video detectors shall be installed in separate 2-inch PVC conduits.
10. Contractor and his employees shall exercise appropriate caution while working within the rights-of-way of Villa Maria Road and Joseph Drive, and insure that all appropriate traffic control devices called for in the traffic control plans are in place before performing any work within the roadway rights-of-way.

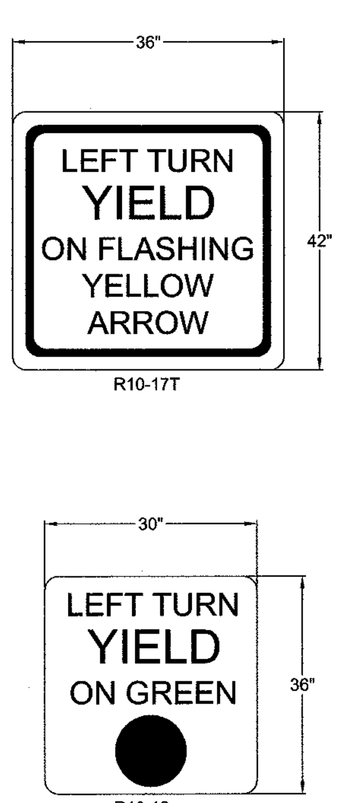


Transportation Engineering Analysts
1008 Woodcreek Drive - College Station, Texas 77845 - (979) 693-5800
Firm Registration No. F-126

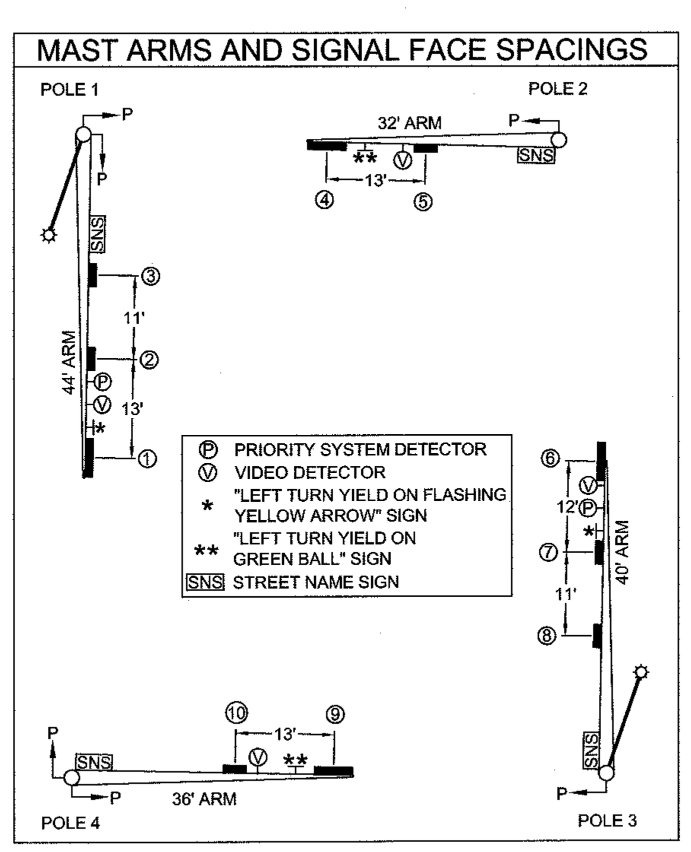
LEGEND

○	TRAFFIC SIGNAL POLE
C	CONTROLLER
◇	CONDUIT & WIRE RUN NUMBER
▪	GROUND BOX
	TRAFFIC SIGNAL HEAD
	LOOP DETECTION AREA
	PROPOSED LUMINAIRE
	EXISTING LUMINAIRE
○ PP	POWER POLE
	STREET SIGN
—G—	GAS LINE
—UGT—	TELEPHONE LINE (UNDERGROUND)
—E—	ELECTRIC LINE
—UGE—	ELECTRIC LINE (UNDERGROUND)
—FOC—	FIBER OPTIC LINE
—W—	WATER LINE
—SS—	SANITARY SEWER LINE
— - - —	RIGHT-OF-WAY
	MAST ARM
P	PEDESTRIAN SIGNAL HEAD
Ⓥ	VIDEO DETECTOR
Ⓟ	PRIORITY SYSTEM DETECTOR
BBS	BACKUP BATTERY SYSTEM





MAST ARMS AND SIGNAL FACE SPACINGS



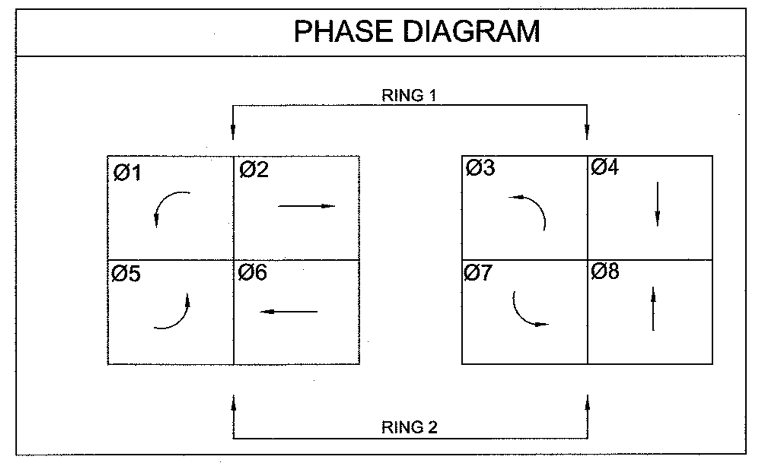
SIGNAL FACES

Faces	Description
R Y G — 2,3,5,7,8,10	12" ONE-WAY HORIZONTAL 3-SECTION R - Y - G SIGNAL HEAD
R YS YF G — 1,6	12" ONE-WAY HORIZONTAL 4-SECTION R - YS - YF - G SIGNAL HEAD
R Y YS G G — 4,9	12" ONE-WAY HORIZONTAL 5-SECTION R - Y - YS - G - G SIGNAL HEAD
P	PEDESTRIAN SIGNAL

CONTROLLER FUNCTION

PHASE	RECALL	MEMORY
1	OFF	OFF
2	ON	OFF
3	OFF	OFF
4	OFF	OFF
5	OFF	OFF
6	ON	OFF
7	OFF	OFF
8	OFF	OFF

PHASE DIAGRAM



COLOR SEQUENCE CHART

SIGNAL FACE \ PHASE	Ø1 + Ø5	CLR TO Ø2 + Ø6	Ø2 + Ø6	CLR TO Ø3 + Ø7	Ø3 + Ø7	CLR TO Ø4 + Ø8	Ø4 + Ø8	CLR TO Ø1 + Ø5		EMERG. FLASH
1	G	YS	YF	YS	R	R	R	R		R
2,3	R	R	G	Y	R	R	R	R		R
4	R	R	R	R	G	YS	G	Y		R
5	R	R	R	R	R	R	G	Y		R
6	G	YS	YF	YS	R	R	R	R		R
7,8	R	R	G	Y	R	R	R	R		R
9	R	R	R	R	G	YS	G	Y		R
10	R	R	R	R	R	R	G	Y		R

R	RED BALL
R	RED ARROW
Y	YELLOW BALL
YS	YELLOW ARROW (STEADY)
YF	YELLOW ARROW (FLASHING)
G	GREEN BALL
G	GREEN ARROW

PHASE SEQUENCE
Ø1 + Ø5
Ø2 + Ø6 (RECALL)
Ø3 + Ø7
Ø4 + Ø8

VIDEO DETECTION DETAIL

AREA	SETTING	FUNCTION
A-1	PRESENCE	CALL & EXTEND Ø 1
A-2A, A-2B	PULSE	CALL & EXTEND Ø 2
A-3	PRESENCE	CALL & EXTEND Ø 3
A-4	PRESENCE	DELAY CALL & EXTEND Ø 4
A-5	PRESENCE	CALL & EXTEND Ø 5
A-6A, A-6B	PULSE	CALL & EXTEND Ø 6
A-7	PRESENCE	CALL & EXTEND Ø 7
A-8	PRESENCE	DELAY CALL & EXTEND Ø 8

WIRE RUN

ITEM	RUN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
WIRE	3/C #4	1											1			
	3-1/C #10						1	1			1	1			2	
	OPTICOM MODEL 138 CABLE						1	1			1	1				2
	5/C #14			1	1		1	1	2		3	2				6
	7/C #14			1	1		1	1	1		2	1				4
	9/C #14			1	1		1	1	1		2	1				4
	#6 BARE ELECTRICAL CONDUCTOR (GROUND WIRE)			1	1		1	1	1		1	1				
VIDEO CABLE/ WIRE	ITERIS COAXIAL COMMUNICATION CABLE					1				2				4		
CONDUIT	2" RMC (EXISTING)	X														
	2" RMC (NEW)		X													
	3" RMC (EXISTING)			X												
	2" PVC					X				X			X	X	X	
	3" PVC				X		X		X			X				
	4" PVC							X			X					X

NO.	DATE	ISSUED FOR
1	06-19-14	Review
2	07-02-14	Bid
3	----	----
4	----	----

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STATE OF TEXAS
JOSEPH D. BLASCHKE
42200
LICENSED PROFESSIONAL ENGINEER
7/1/14

ISSUED FOR BIDDING AND CONSTRUCTION.

Villa Maria/Joseph Dr. Signal & Roadway Improvements

City of Bryan

Bryan, Texas

Traffic Signal Plan

CONTRACT NO. 600079

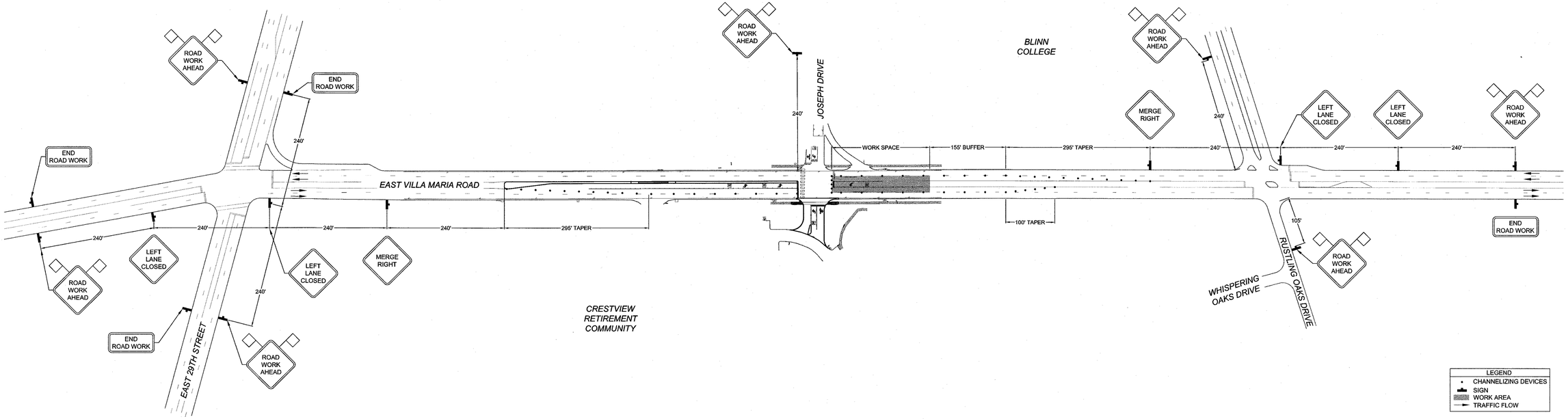
SHEET NO.

C1.5

Traffic Signal Plan

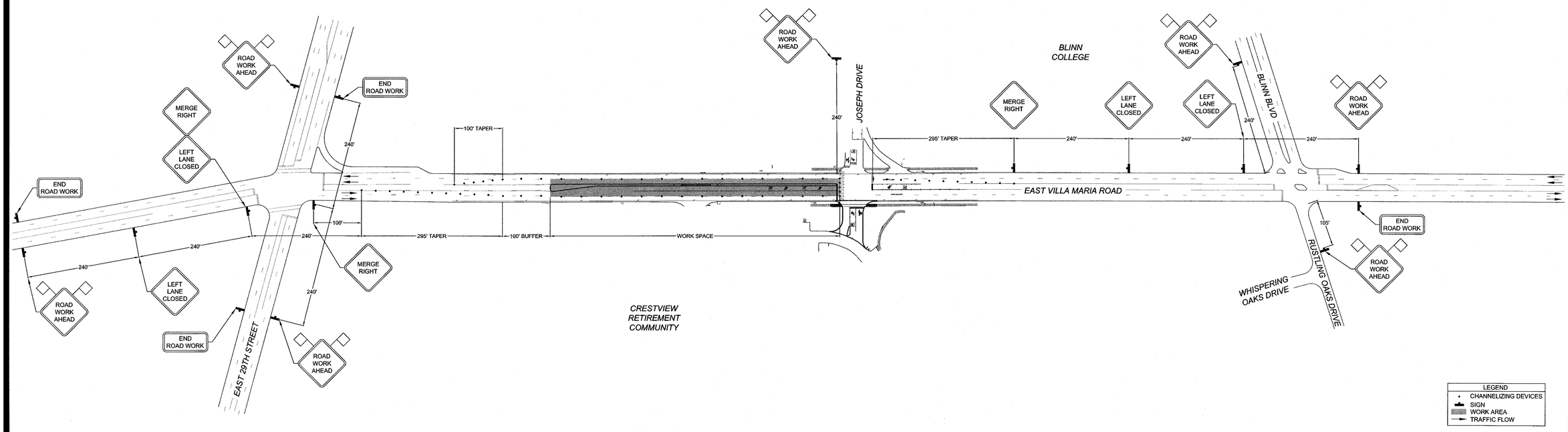
1"=20'-0"

1



Traffic Control Plan - Phase 2

1"=100'-0" | 2



Traffic Control Plan - Phase 1

1"=100'-0" | 1

NO.	DATE	ISSUED FOR
1	06-19-14	Review
2	07-02-14	Bid
3	----	----
4	----	----

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STATE OF TEXAS
JOHN RUSK
87884
LICENSED PROFESSIONAL ENGINEER
7/1/2014

Villa Maria/Joseph Dr. Signal & Roadway Improvements

City of Bryan
Bryan, Texas
Traffic Control Plan

CONTRACT NO. 600079

SHEET NO.

C1.6

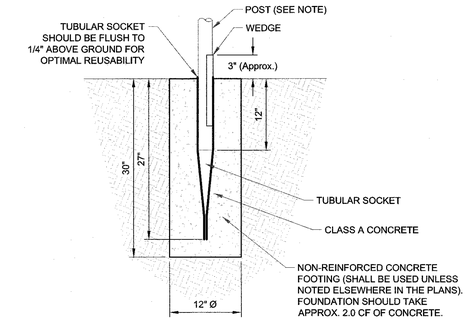
Not Used — 10

Not Used — N.T.S. — 6

Not Used — 9

Not Used — N.T.S. — 5

Sign Footing Wedge Anchor Steel System — N.T.S. — 2



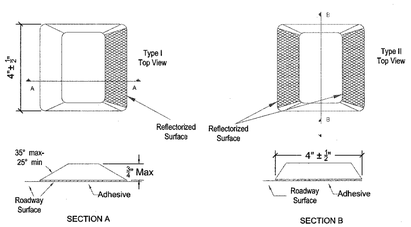
NOTE: MATERIAL USED AS POST WITH THIS SYSTEM SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:

- 13 BWG TUBING (2.375" OUTSIDE DIAMETER) (TWT)
- 0.095" NOMINAL WALL THICKNESS
- SEAMLESS OR ELECTRIC-RESISTANCE WELDED STEEL TUBING
- STEEL SHALL BE HSLAS GR 55 PER ASTM A1011 OR ASTM A1008
- OTHER STEELS MAY BE USED IF THEY MEET THE FOLLOWING:
  - •• 55,000 PSI MINIMUM YIELD STRENGTH
  - •• 70,000 PSI MINIMUM TENSILE STRENGTH
  - •• 18% MINIMUM ELONGATION IN 2"
- WALL THICKNESS (UNCOATED) SHALL BE WITHIN THE RANGE OF .083" TO .099"
- OUTSIDE DIAMETER (UNCOATED) SHALL BE WITHIN THE RANGE OF 2.369" TO 2.381"
- GALVANIZATION PER ASTM 123 OR ASTM A653 G210. FOR PRECOATED STEEL TUBING (ASTM A653), RECOAT TUBE OUTSIDE DIAMETER WELD SEAM BY METALLIZING WITH ZINC WIRE PER ASTM B833.

WEDGE ANCHOR SYSTEM INSTALLATION PROCEDURE:

1. DIG FOUNDATION HOLE. WHERE SOLID ROCK IS ENCOUNTERED AT GROUND LEVEL, THE FOUNDATION SHALL BE A MINIMUM DEPTH OF 18". WHEN SOLID ROCK IS ENCOUNTERED BELOW GROUND LEVEL, THE FOUNDATION SHALL EXTEND IN THE SOLID ROCK A MINIMUM DEPTH OF 18" OR PROVIDE A MINIMUM FOUNDATION DEPTH OF 30". IF SOLID ROCK IS ENCOUNTERED, THE SOCKET/STUB MAY BE REDUCED IN LENGTH AS REQUIRED TO A MINIMUM LENGTH OF 18". ANY MATERIAL REMOVED FROM THE SOCKET/STUB SHALL BE FROM THE BOTTOM AND THE CLEARANCE REQUIREMENTS GIVEN ON SMD (GEN) MUST BE FOLLOWED. THE INNER SURFACES OF THE SOCKET/STUB MUST REMAIN FREE OF CONCRETE OR OTHER DEBRIS.
2. THE ENGINEER MAY PERMIT BATCHES OF CONCRETE LESS THAN 2 CUBIC YARDS TO BE MIXED WITH A PORTABLE, MOTOR DRIVEN CONCRETE MIXER. FOR SMALL PLACEMENTS LESS THAN 0.5 CUBIC YARDS, HAND MIXING IN A SUITABLE CONTAINER MAY BE ALLOWED BY ENGINEER. PLACE CONCRETE INTO HOLE UNTIL IT IS APPROXIMATELY FLUSH WITH THE GROUND. CONCRETE SHALL BE CLASS A.
3. INSERT TUBULAR SOCKET INTO CONCRETE UNTIL TOP OF SOCKET IS APPROXIMATELY 1/4" ABOVE THE CONCRETE FOOTING.
4. PLUMB THE SOCKET. ALLOW A MINIMUM OF 4 DAYS FOR CONCRETE TO SET, UNLESS OTHERWISE DIRECTED BY ENGINEER.
5. ATTACH SIGN TO THE SIGN POST.
6. INSERT THE SIGN POST INTO SOCKET AND ALIGN SIGN FACE WITH ROADWAY.
7. DRIVE THE WEDGE INTO THE SOCKET TO SECURE POST. THIS WILL LEAVE APPROXIMATELY 3 INCHES OF THE WEDGE EXPOSED.

Raised Pavement Markers — N.T.S. — 8



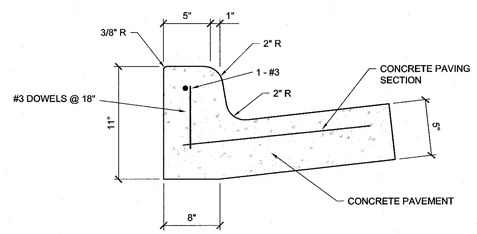
GENERAL NOTES:

ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
ALL PAVEMENT MARKING MATERIALS SHALL MEET THE REQUIRED DEPARTMENTAL MATERIAL SPECIFICATIONS AS SPECIFIED BY THE PLANS.

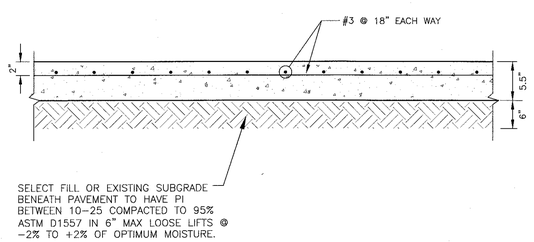
SPECIFICATION REFERENCE TABLE

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECT.)	DMS-4200
EPOXY	DMS-6100
BITUMINOUS ADHESIVE FOR PVMT MARKERS	DMS-6130

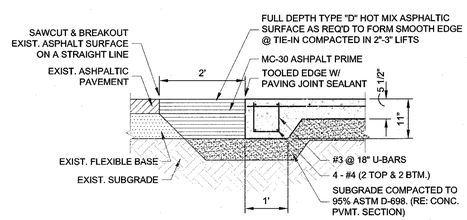
Monolithic Curb — N.T.S. — 4



Driveway Paving — N.T.S. — 7



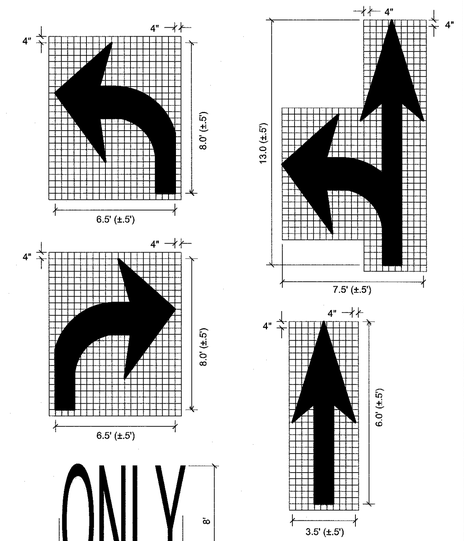
Asph to Conc Tie In — N.T.S. — 3



Standard Pavement Marking — N.T.S. — 1

GENERAL NOTES;

1. Minimum 8 foot white markings should be used, unless otherwise noted. If message consists of more than one word, it should be placed with first word nearest the driver.
2. The longitudinal space between markings should be at least four times the height of the markings, on low speed roads, but should not exceed ten times the height under any condition.
3. Markings considered appropriate for use when warranted include the following:
   A. Regulatory
      STOP
      RIGHT (LEFT) TURN ONLY
      25 MPH
      SYMBOL ARROWS
   B. Warning
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X-ING
      PED X-ING
      R X R (see RCPM standard)
   C. Guide
      US XXX
      ROUTE XXX
      STATE XXX
      Other words or symbols may be necessary under certain conditions
4. Uncontrolled use of pavement markings can result in driver confusion. Word and symbol markings should be no more than three lines.
5. The word "STOP" shall not be used on the pavement unless accompanied by a Stop line and Stop sign. The word "STOP" shall not be placed on the pavement in advance to a stop line, unless every vehicle is required to stop at all times.
6. Pavement markings should generally be no more than one lane in width, with School messages being the exception. For details of School and School crossing pavement markings, refer to Part VII of the "Texas Manual on Uniform Traffic Control Devices".
7. Spacing between letters should be approximately 4 inches. The width of letters may vary depending on the width of the travel lanes.
8. Lane-Use arrow markings may be used to convey either guidance or mandatory messages. Arrows used to convey a mandatory movement must be accompanied by standard signs and the pavement marking word "ONLY".
9. Pavement markings are to be located as specified elsewhere in the plans.



SPACING BETWEEN LINES OF PAVEMENT MARKINGS	
MPH	SPACING
≤45	MINIMUM 4 TIMES THE LETTER HEIGHT
>45	MINIMUM - 4 TIMES THE LETTER HEIGHT MAXIMUM - 10 TIMES THE LETTER HEIGHT

NO.	DATE	ISSUED FOR
1	06-19-14	Preliminary Design
2	07-02-14	Bid
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4	----	----

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DRAWN BY:	APPV'D BY:	PLOT SCALE:
DKE	JIR	1:1

TBPE FIRM REGISTRATION: #413

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4077 CROSS PARK DR. STE. 100 · BRYAN, TEXAS 77802 · (979) 776-9700

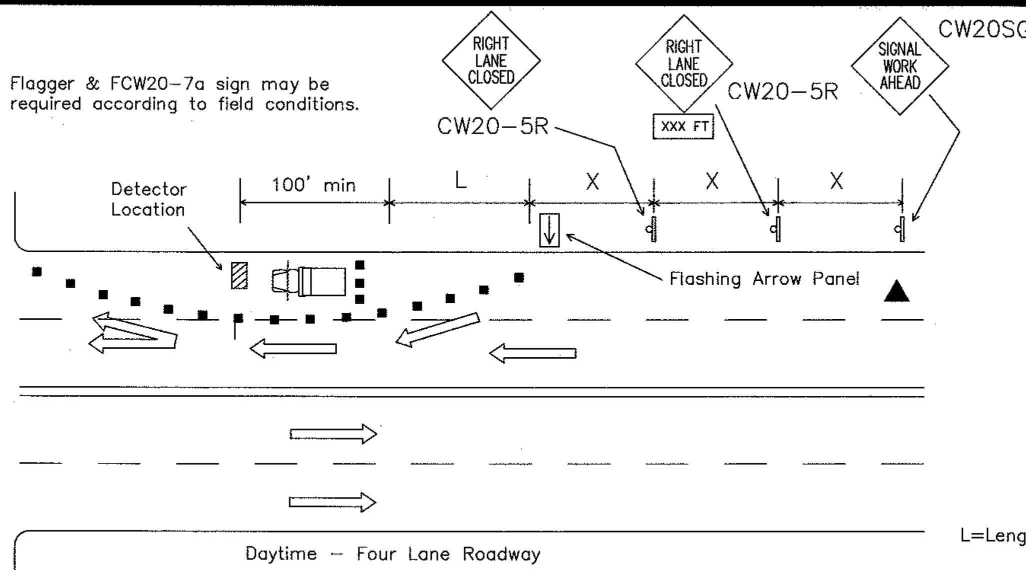
STATE OF TEXAS
JOHN RUSK
87884
LICENSED PROFESSIONAL ENGINEER
7/1/2014

Villa Maria/Joseph Dr. Signal & Roadway Improvements
City of Bryan
Bryan, Texas
Project Details

CONTRACT NO. 600079

SHEET NO.

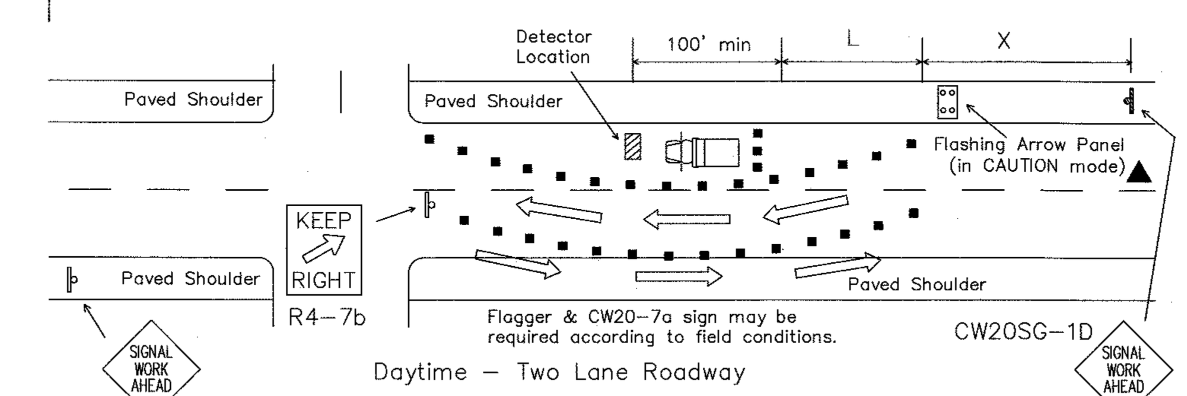
C1.7



Posted Speed	Formula	Minimum Desirable Taper Lengths ** 10' Offset	11' Offset	12' Offset	Suggested Maximum Spacing of Device On a Taper	On a Tangent	Minimum Sign Spacing X Distance
30	$L=\frac{WS^2}{60}$	150'	165'	180'	30'	60'-75'	120'
35		205'	225'	245'	35'	70'-90'	160'
40		265'	295'	320'	40'	80'-100'	240'
45	L=WS	450'	495'	540'	45'	90'-110'	320'
50		500'	550'	600'	50'	100'-125'	400'
55		550'	605'	660'	55'	110'-140'	500'
60		600'	660'	720'	60'	120'-150'	600'
65		650'	715'	780'	65'	130'-165'	700'
70		700'	770'	840'	70'	140'-175'	800'
75		750'	825'	900'	75'	150'-185'	900'

** Taper lengths have been rounded off.

L=Length of Taper (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

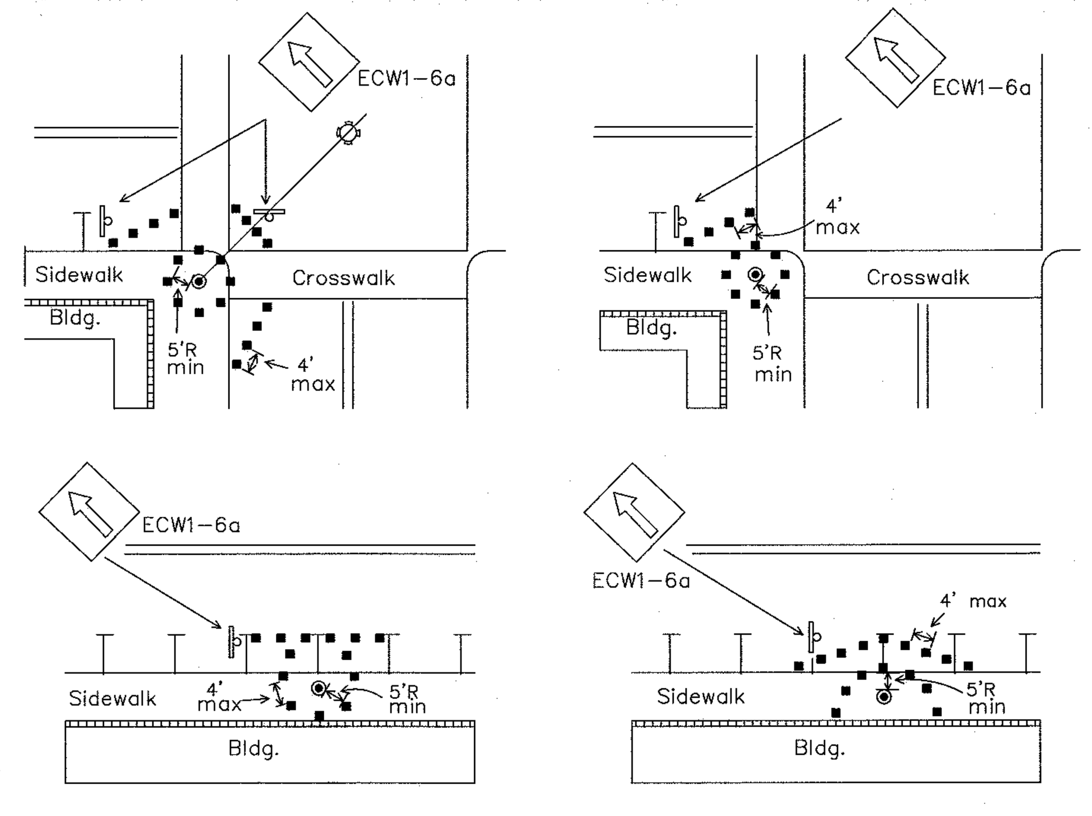


TYPICAL DETECTOR INSTALLATION

OR OTHER WORK OPERATIONS THAT ARE SHORT TERM OR SHORT DURATION

Nighttime Channelizing Devices shall be reflectorized.

Typical Detector Installation — N.T.S. — 12



Channelizing devices should not be placed closer than 5 foot radius (minimum) to signal poles.
Parking may be eliminated by placing channelizing devices in spaces.
If pedestrian walkways are blocked, refer to the Texas Manual on Uniform Traffic Control Devices (TMUTCD) Part 6.

TYPICAL RESTRICTED PEDESTRIAN MOVEMENTS

FOR ALL WORK OPERATIONS REGARDLESS OF WORK DURATION

Typ. Restricted Ped. Movements — N.T.S. — 9

▲ The arrow panel may be omitted when stated elsewhere in the plans.

1. Typical channelizing device is the 28" cone.
2. Plastic drums or vertical panels may be used if approved by the Engineer.
3. For several closely adjoining projects, advance signing may not be required in advance of each intersection, but only in advance of the intersections at the project limits.
4. See details elsewhere in the plans for advance signing requirements.
5. Advance signs shall be in place when signal construction operations are in progress.
6. The contractor shall remove advance signs when no construction operations are underway.
7. Obstructions or hazards at the work area shall be clearly marked and delineated at all times.
8. All holes, trenches or other hazardous areas shall be adequately protected by lights or other protective devices.
9. Trenches shall be covered or surrounded with orange plastic construction fence as directed by the Engineer.
10. Flagger and FCW20-7a sign may be required according to field conditions.
11. Vehicles parked in roadway shall be equipped with two strobes.
12. High level flags at corners of vehicle may also be used.
13. Work operations that require work vehicle in traveled way 20 minutes or less may use cones, high level flags and strobes as advance warning devices.
14. Cones should only be placed around vehicle.

Notes — N.T.S. — 6

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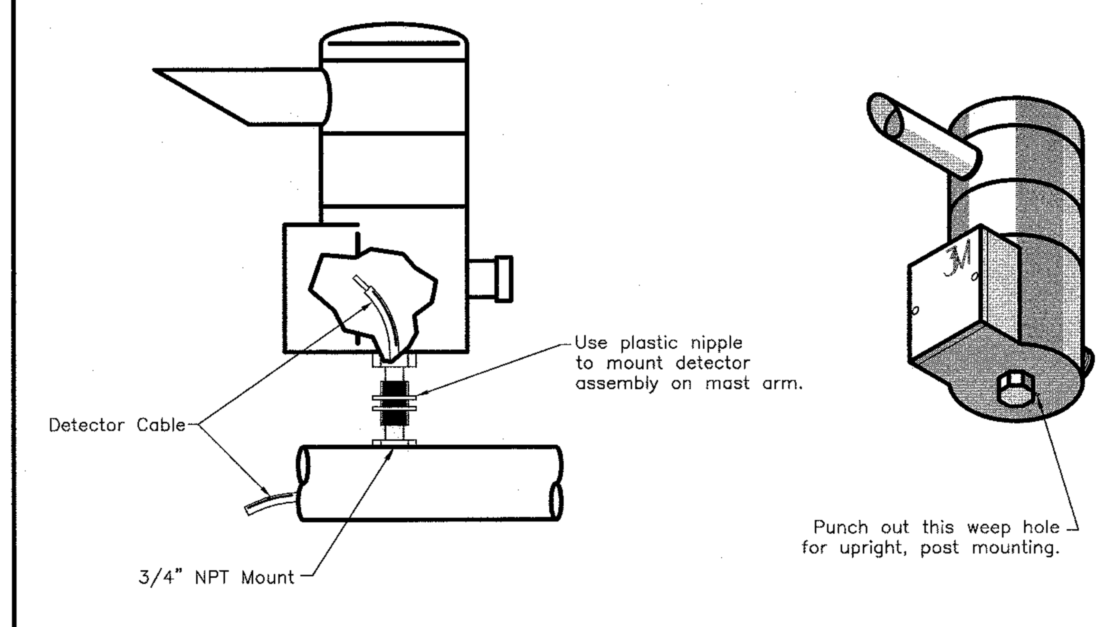
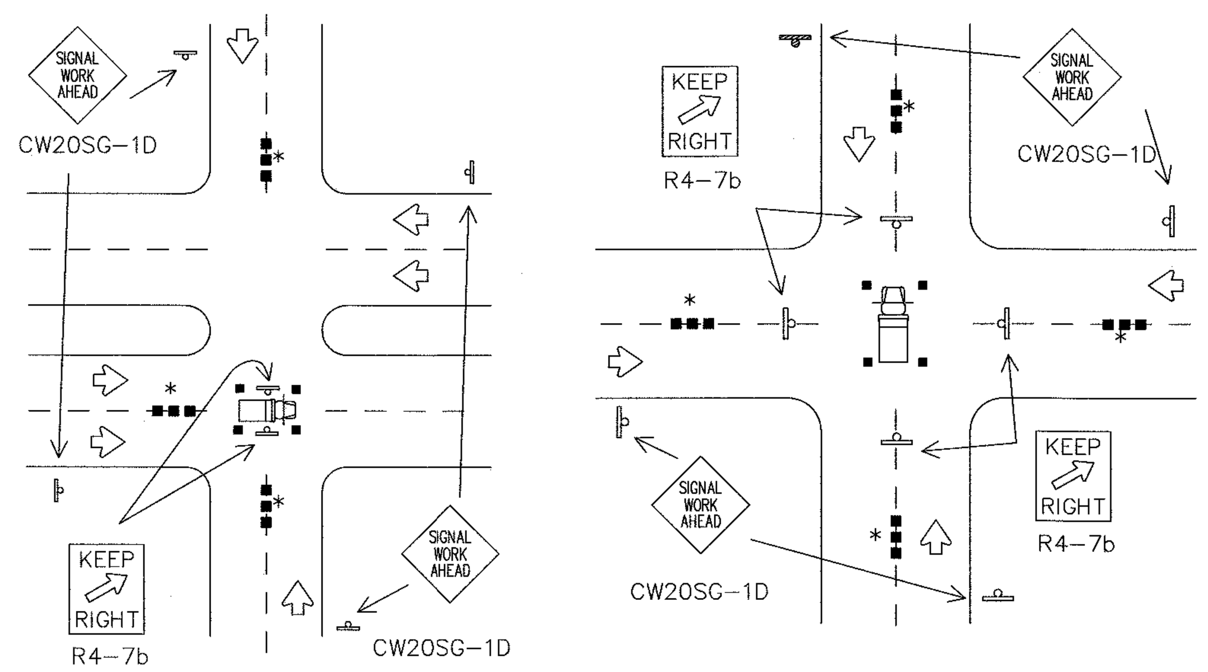
Firm Registration No. F-126



PRIORITY CONTROL SYSTEM DETECTOR INSTALLATION

Detector Mount and Weep Hole Loc. N.T.S. — 3

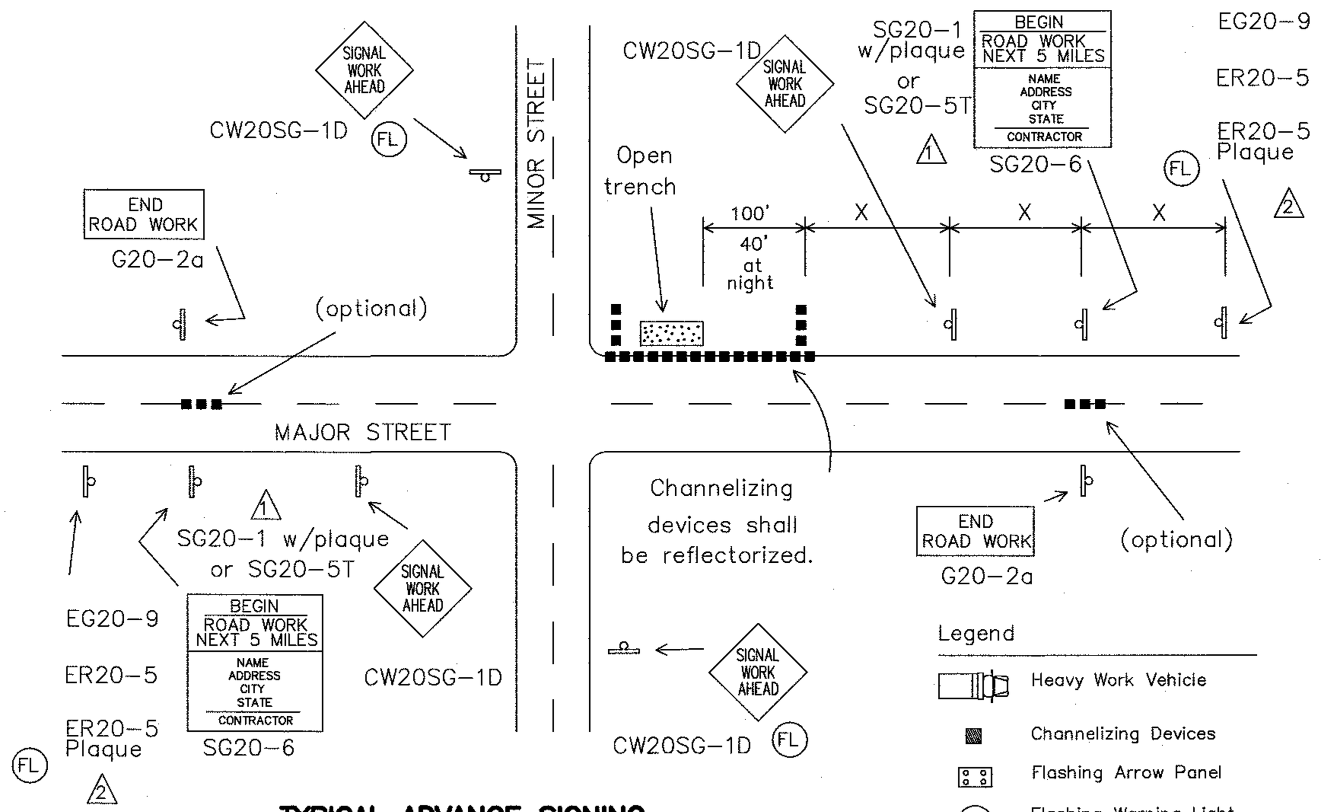


TYPICAL HANGING SIGNAL INSTALLATIONS

OR OTHER WORK OPERATIONS THAT ARE SHORT TERM OR SHORT DURATION

* Advance warning channelizing devices are optional.

Typical Hanging Signal Installations — N.T.S. — 11

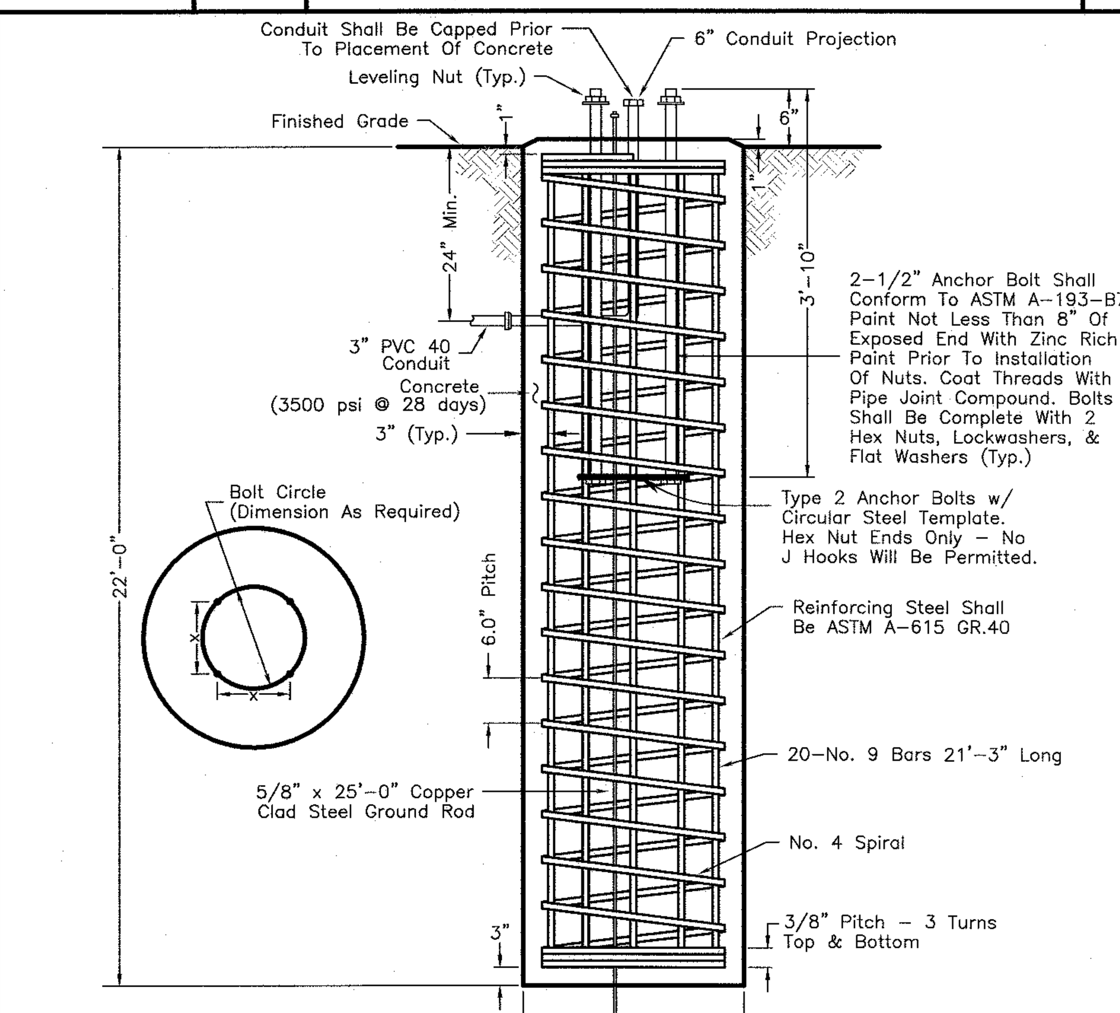


TYPICAL ADVANCE SIGNING

FOR LONG TERM and INTERMEDIATE-TERM STATIONARY WORK OPERATIONS

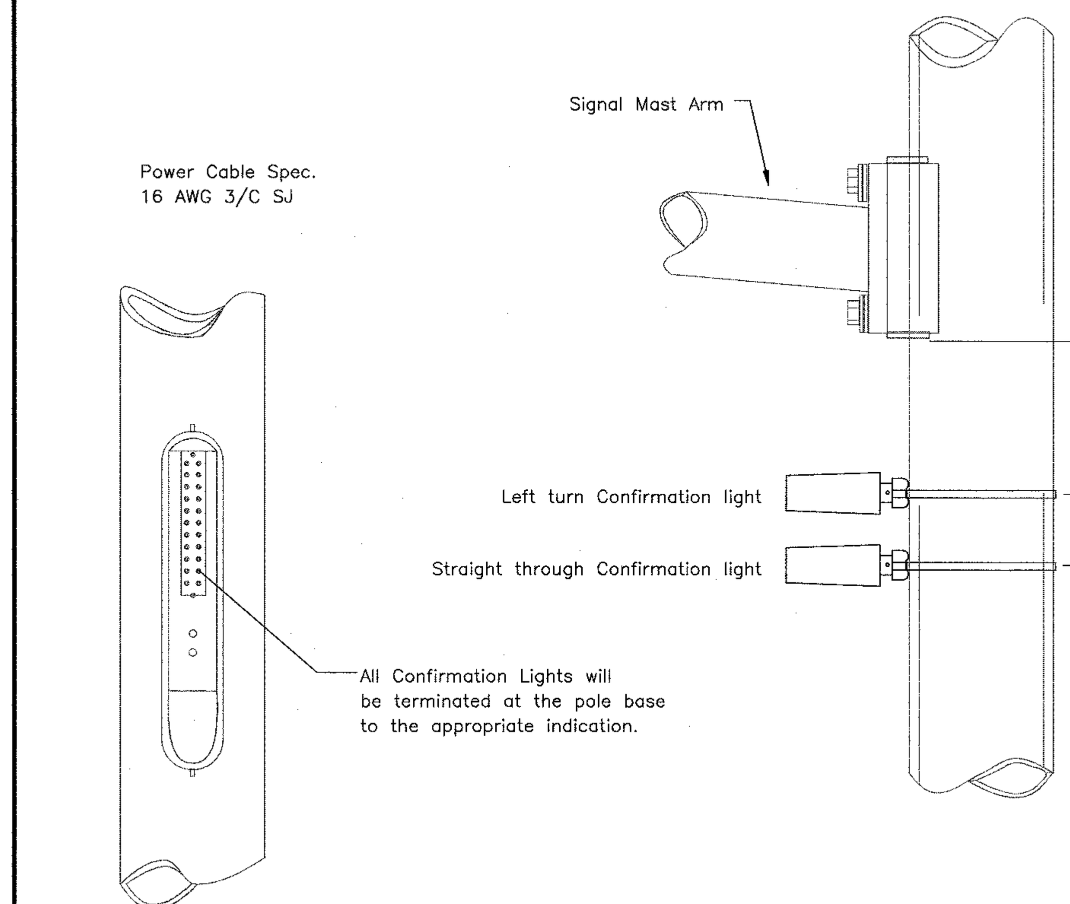
Observe Warning Signs State Law (R20-3) shall be required.
See BC(2).
Location will be as directed by the Engineer.

Typical Advance Signing — N.T.S. — 8

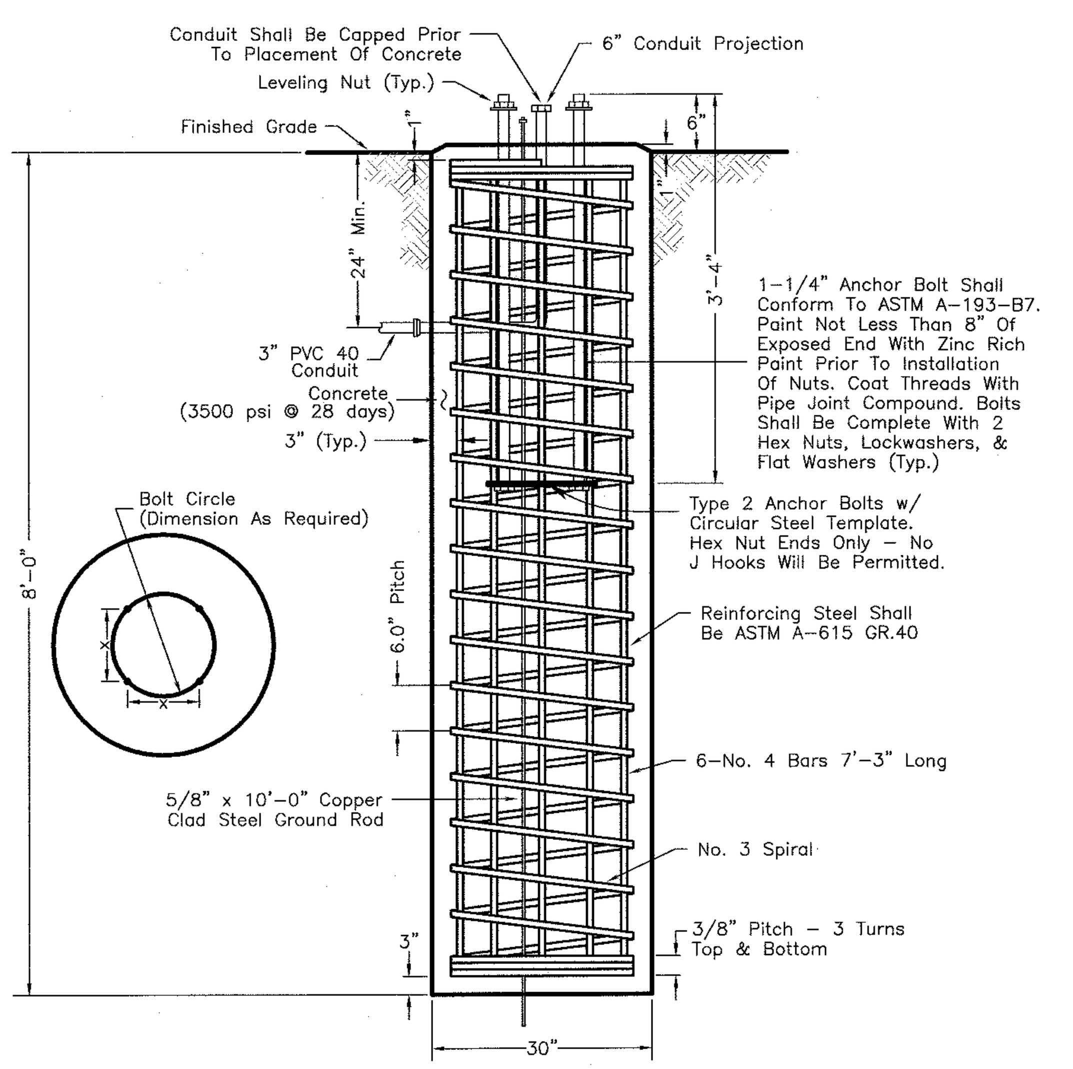


(Not To Scale) (Long Mast Arm - Single Arm 50' in Length or Longer)

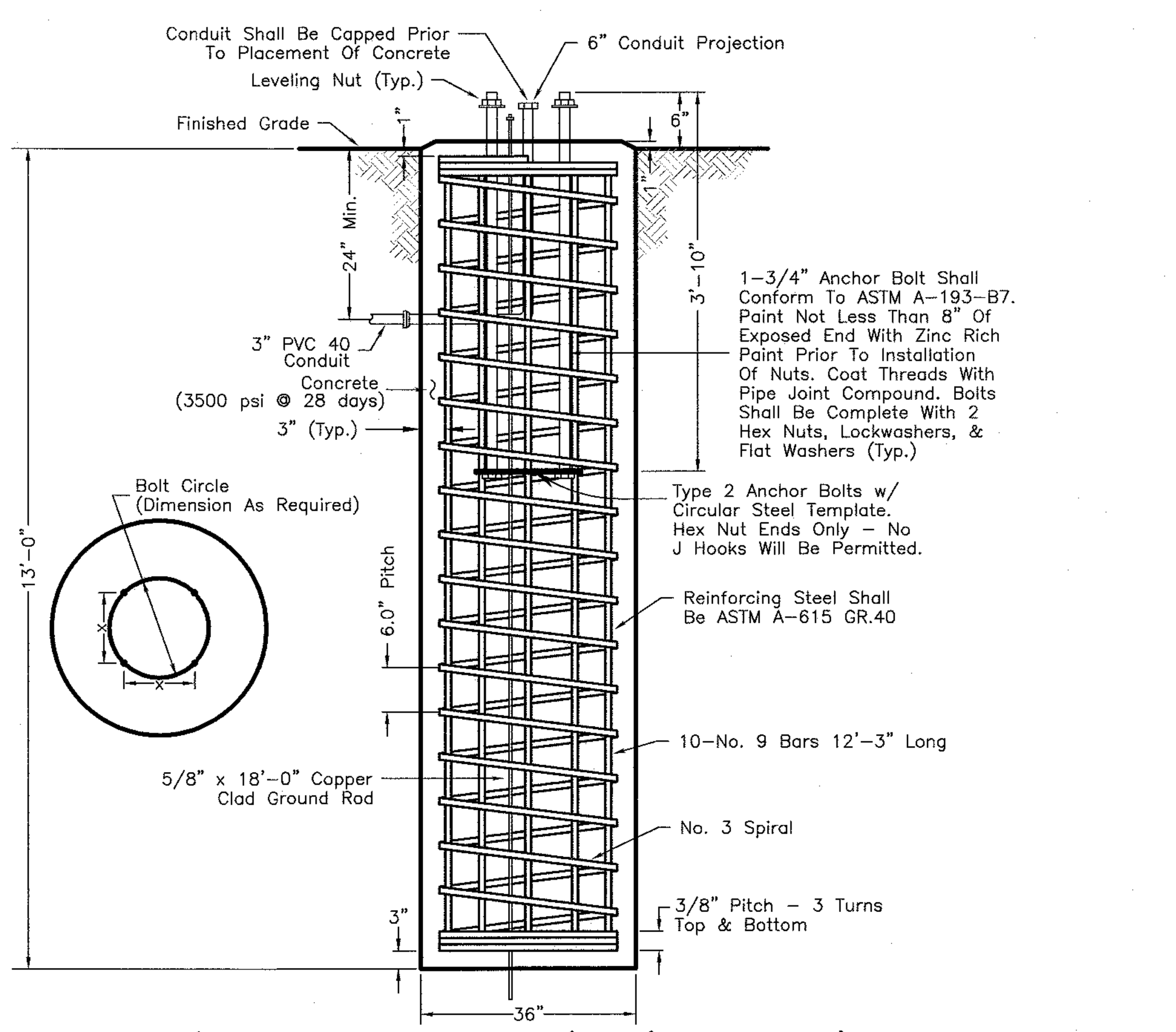
Traffic Singal Pole Foundation — N.T.S. — 5



Confirmation Light Installation — N.T.S. — 2

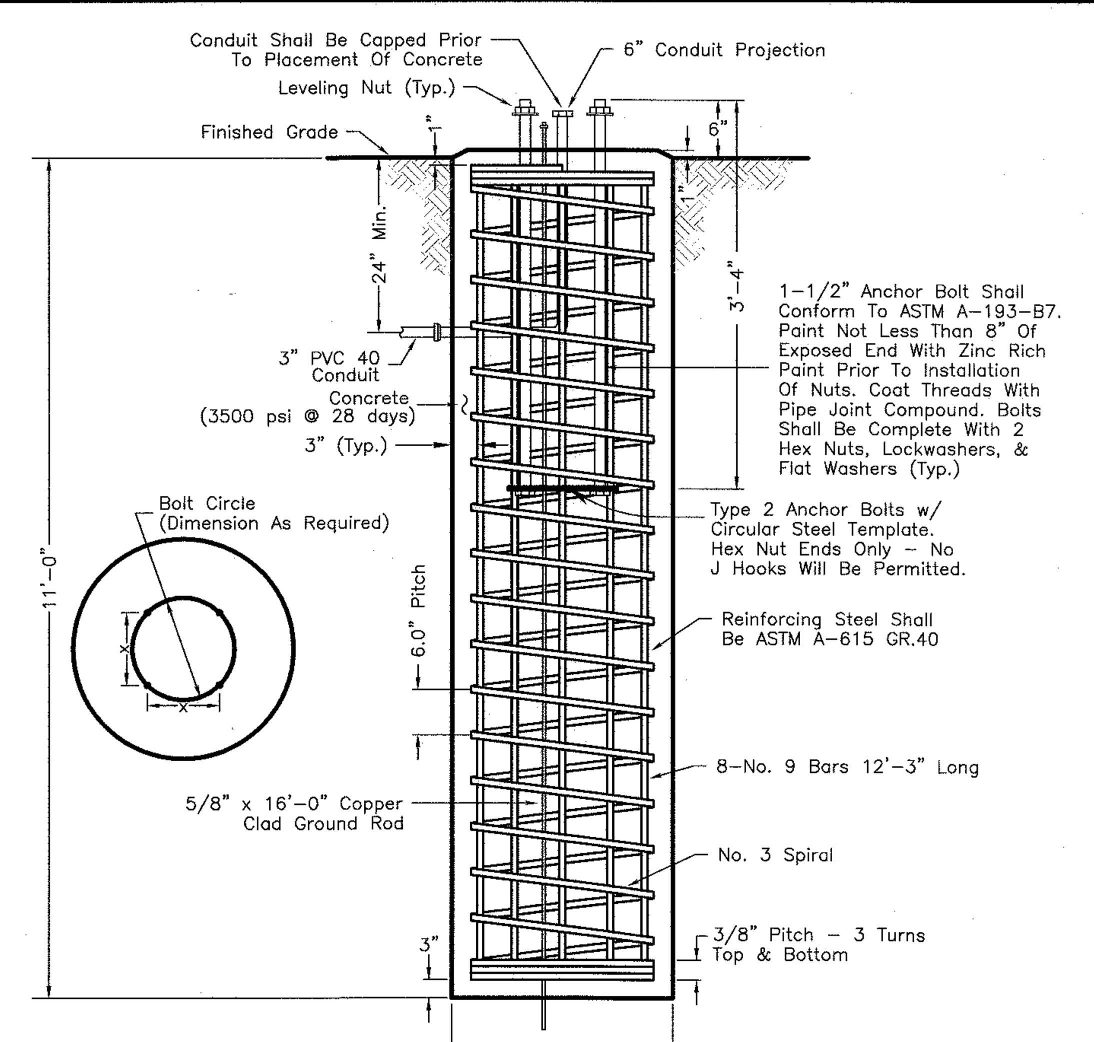


40' Luminaire Pole Foundation — N.T.S. — 10



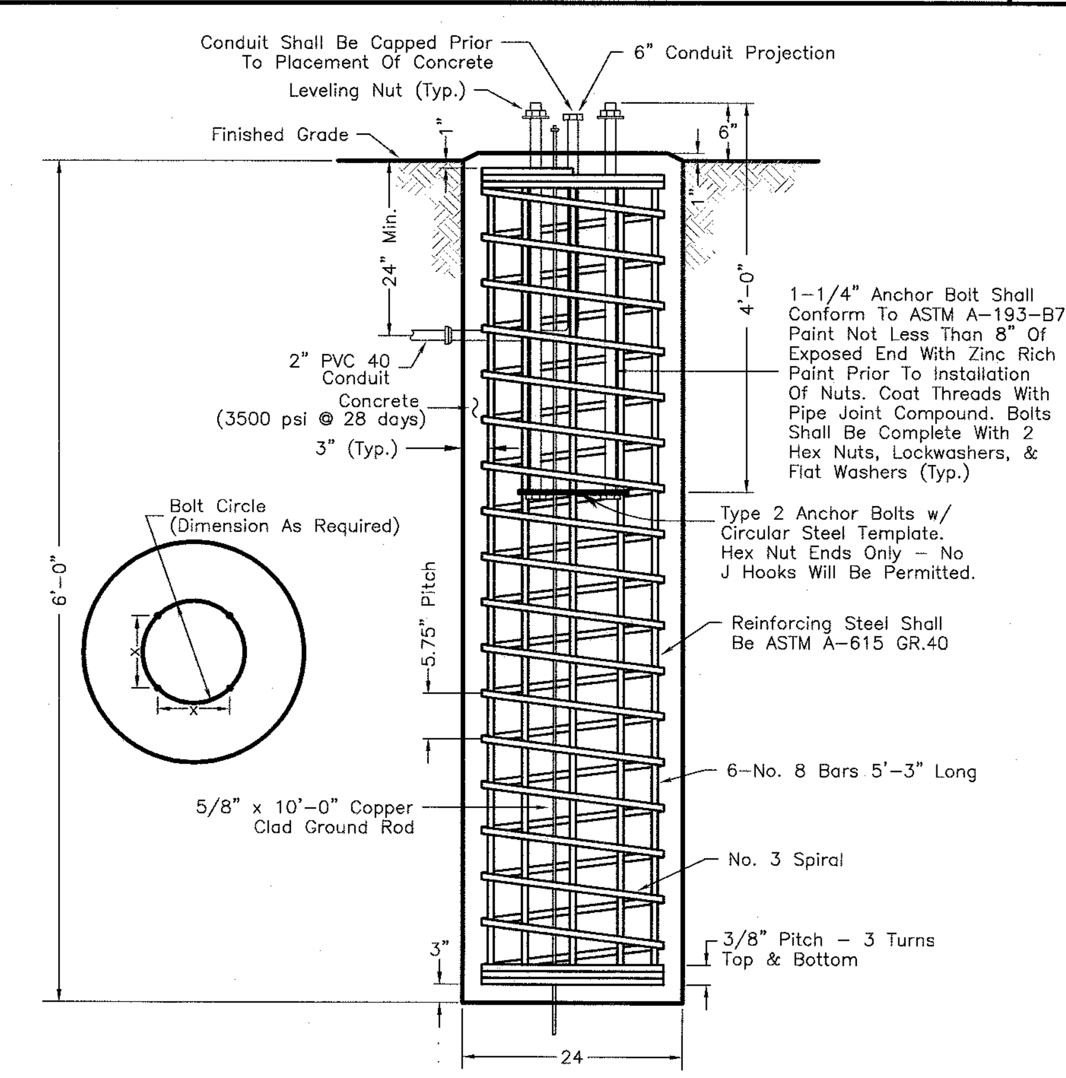
(Single Mast Arms 33'-48' in Length)

Cantilever Traffic Signal Pole Foundation — N.T.S. — 7



(Single Mast Arms 32' in Length or Shoter)

Cantilever Traffic Signal Pole Fdn. — N.T.S. — 4



Pededtal Pole Foundation — N.T.S. — 1

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1	06-19-14	Review
2	07-02-14	Bid
3	----	----
4	----	----

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DRAWN BY: DKE | APPV'D BY: JIR | PLOT SCALE: 1:1

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STATE OF TEXAS — JOSEPH D. BLASCHKE — 42200 — LICENSED PROFESSIONAL ENGINEER — 7/1/14

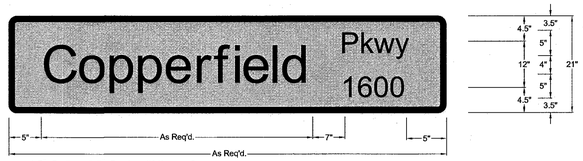
ISSUED FOR BIDDING AND CONSTRUCTION.

Villa Maria/Joseph Dr. Signal & Roadway Improvements
City of Bryan
Bryan, Texas
Traffic Signal Details

CONTRACT NO. 600079

SHEET NO.

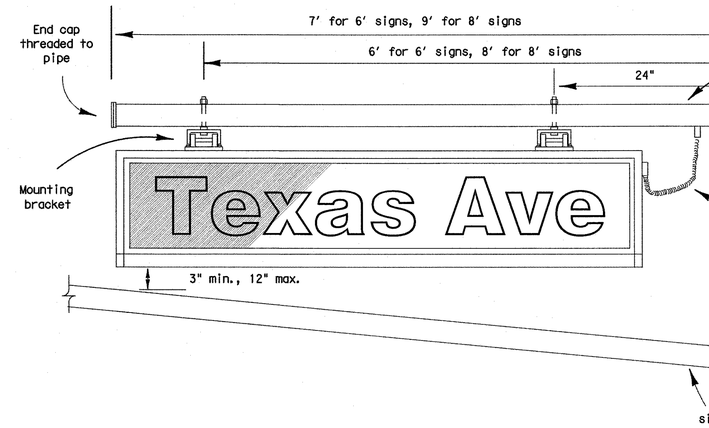
C1.8



1.5" Radius, 0.5" Border, White on Green
"Copperfield" ClearviewHwy-3-W 72% spacing; "Pkwy"
clearviewHwy-2-W110% spacing;
"1600" ClearviewHwy-2-W 60% spacing;
Capital Letter – 12" High
Lower Case Letters – 9" High

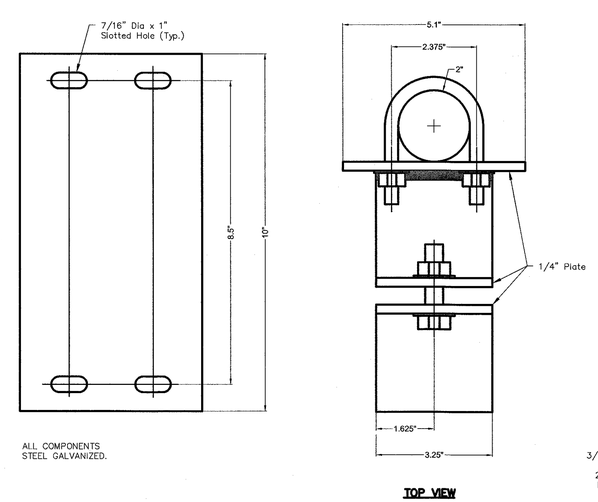
Not Used — N.T.S. — 12

Typical Street Name Sign Detail — N.T.S. — 9

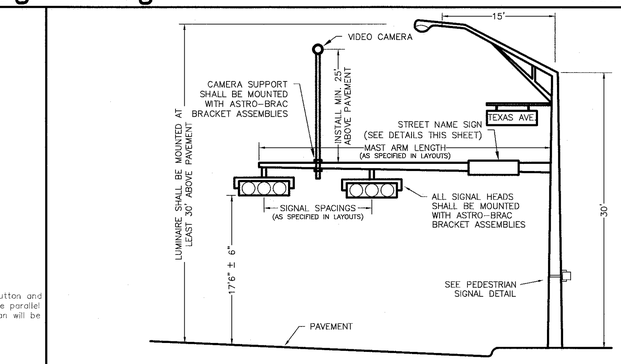


Not Applicable To This Project

Internally Lighted Street Name Sign Mounting — N.T.S. — 3

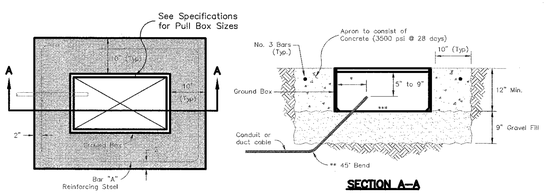


Bracket Assembly Detail for Video Camera — N.T.S. — 8



Pedestrian Signal Detail — 5

Signal Pole, Video Camera, Street Name Sign, and Luminaire Mountings — N.T.S. — 2

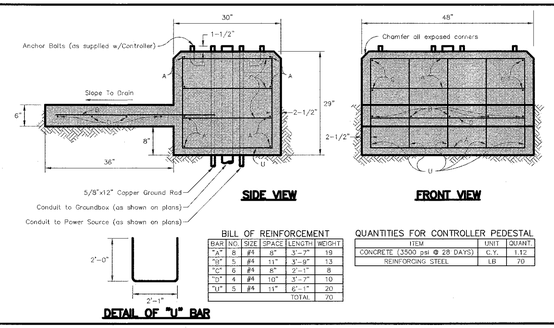


* Final position of end of conduit shall not exceed one-half of the distance to the side of the box opposite of the conduit entry.

** 90° when approved by the engineer.

*** Place gravel "under" the box, not "in" the box. Gravel should not encroach on the interior volume of the box.

Apron for Ground Boxes — N.T.S. — 11



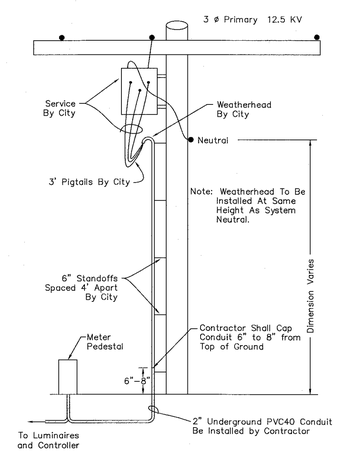
BILL OF REINFORCEMENT

BAR	NO.	SIZE	SPACE	LENGTH	WEIGHT
"A"	8	#4	8"	3'-7"	19
"B"	5	#4	11"	3'-8"	13
"C"	6	#4	8"	2'-1"	8
"D"	4	#4	10"	3'-7"	10
"U"	5	#4	11"	6'-1"	20
				TOTAL	70

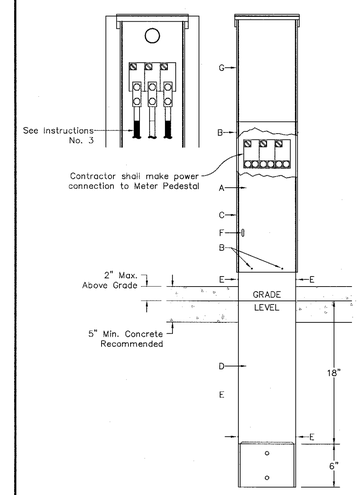
QUANTITIES FOR CONTROLLER PEDESTAL

ITEM	UNIT	QUANT.
CONCRETE (3500 psi @ 28 DAYS)	C.Y.	1.12
REINFORCING STEEL	LB.	70

Controller Pedestal — N.T.S. — 7



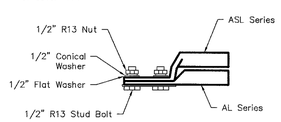
Power Outlet from Pole — 4



INSTALLATION INSTRUCTIONS

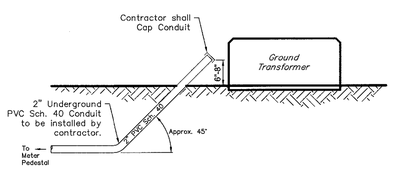
1. Remove cover "A" by removing (4) screws "B" Slide cover slightly towards bottom of post (allowing top of cover to clear top retaining bracket) and pull cover away from post.
2. Remove cover "D" by removing (4) screws "E". Pull cover away from post.
3. Location "G" – When load conductors exit the bottom of the post, remove the small horizontal barrier and rotate 90° to form a vertical barrier inside the post. Re-assemble using the same screw and mounting hole.

   When load conductors exit K.O., use suitable conduit connector for outdoor applications.
4. Noting diagram, properly position post, ensuring bottom of post is 24 inches below grade level.
5. Lay wires in and attach to terminal bar. (See wiring diagram in post trough for torque and wire size information.)
6. Replace cover "D" on post and fasten with (4) screws "E".
7. Replace cover "A" on post and fasten with (4) screws "B".
8. To padlock cover "A", utilize hasp "F".
9. A concrete pad is recommended in some areas to strengthen installation. Pad should be approximately 18"x18" and 5" minimum thickness. Ensure pad does not extend more than 2" above grade to allow future removal of cover "A".

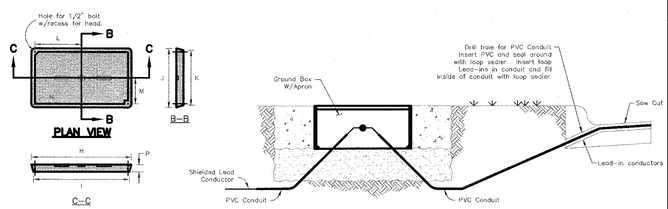


Use Womac Compression connectors or equivalent.
Catalogue Nos. AL Series (Aluminum)
ASL Series (Alum. Stacking)
For Loopfeed, Use stacking connectors.

Meter Pedestal — N.T.S. — 1



Power Outlet from Ground Transformer — 10



TYPE	BOX SIZE	GROUND BOX COVER DIMENSIONS DIMENSIONS (INCHES) H	I	J	K	L	M	N	P
B	11.5"x21"x20"	23-1/4	23	13-3/4	13-1/2	9-7/8	5-1/8	1-3/8	2
D	15.25"x28.25"x20"	30-1/2	30-1/4	17-1/2	17-1/4	13-1/4	6-3/4	1-3/8	2

Typical Ground Box Details — N.T.S. — 6

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Firm Registration No. F-126

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4	----	----

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DRAWN BY: DKE | APPV'D BY: JIR | PLOT SCALE: 1:1

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STATE OF TEXAS
JOSEPH D. BLASCHKE
42200
LICENSED PROFESSIONAL ENGINEER
7/1/14

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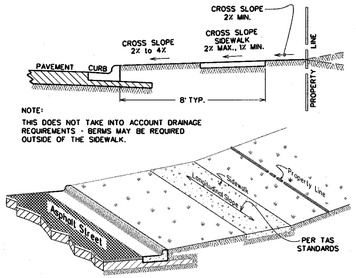
Villa Maria/Joseph Dr. Signal & Roadway Improvements
City of Bryan
Bryan, Texas
Traffic Signal Details

CONTRACT NO. 600079

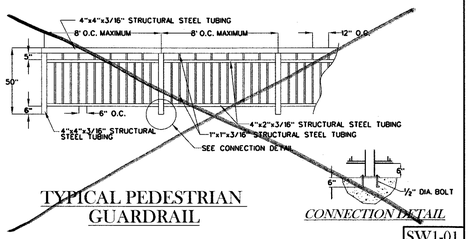
SHEET NO.

C1.9



SIDEWALK SLOPE REQUIREMENTS

SW1-00



TYPICAL PEDESTRIAN GUARDRAIL

CONNECTION DETAIL

SW1-01

GENERAL NOTES:

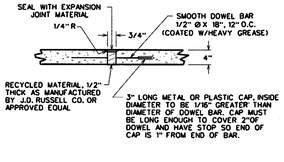
ALL AREAS WHERE EXISTING VEGETATION AND GRASS COVER HAVE BEEN BARED BY CONSTRUCTION SHALL BE ADEQUATELY BLOCK SODDED OR HYDROMULCHED AND WATERED UNTIL GROWTH IS ESTABLISHED. IN DEVELOPED AREAS WHERE GRASS IS PRESENT, BLOCK SOD WILL BE REQUIRED. BARED AREAS SHALL BE SEEDED OR SODDED WITHIN 14 CALENDAR DAYS OF LAST DISTURBANCE.

APPROVED EROSION CONTROL MEASURES MUST BE INSTALLED DURING THE ENTIRE TIME THAT EARTH HAS BEEN BARED BY CONSTRUCTION AND SHALL STAY IN PLACE UNTIL ACCEPTABLE VEGETATIVE GROWTH IS ESTABLISHED AFTER CONSTRUCTION IS COMPLETE AND THEN REMOVED BY CONTRACTOR.

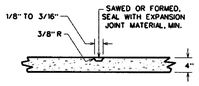
ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

NOTES:

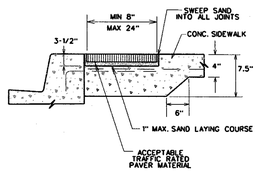
1. SIDEWALK PLACEMENT SHALL BE IN ACCORDANCE WITH B/CS UNIFIED DESIGN GUIDELINES.
2. FINISH: LIGHT BROOM FINISH. JOINTS TO BE TOOLED 1" DEEP AT AN INTERVAL EQUAL TO THE SIDEWALK WIDTH. EXPANSION JOINTS @ 40' O.C., CONTRACTION JOINTS @ 4' O.C.
3. DOWEL IN AND TIE TO ANY CONCRETE STRUCTURE ADJACENT TO SIDEWALK (DRIVEWAY, INLET BOX, CURB, JUNCTION BOX, ETC.) WITH #3 x 12" BARS @ 12" O.C. OR #4 x 12" BARS @ 18" O.C.
4. COMPACTION: COMPACTED SUBGRADE MATERIAL COMPACTED TO A DENSITY AT LEAST 98% OF MAXIMUM DRY DENSITY AS DETERMINED BY PROCTOR COMPACTION TEST ASTM D698 (STANDARD) AND SHALL BE 0-4% WET OF THE OPTIMUM MOISTURE CONTENT
5. A MINIMUM CLEAR PEDESTRIAN WIDTH AS DEFINED BY TAS AND ADA SHALL BE PROVIDED FOR ENTIRE LENGTH OF SIDEWALK.



SIDEWALK EXPANSION & CONSTRUCTION JOINT

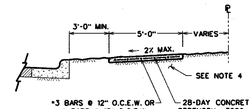


SIDEWALK CONTRACTION JOINT

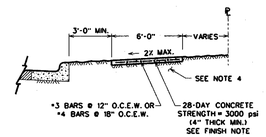


SIDEWALK PAVER SECTION

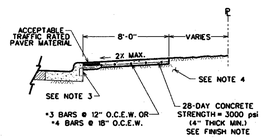
CONCRETE SIDEWALK



ALONG LOCAL STREETS

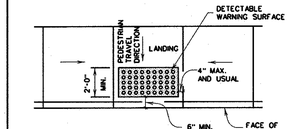


ALONG MINOR COLLECTORS AND LARGER



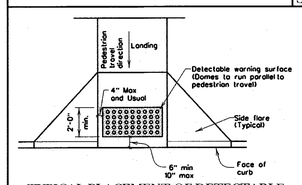
ALONG MINOR COLLECTORS AND LARGER

SW1-02



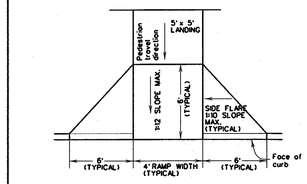
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE

SW2-00



TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN

SW2-01



TYPICAL AMBULATORY RAMP W/ FLARED WINGS

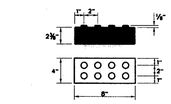
SW2-02

GENERAL NOTES FOR DETECTABLE WARNINGS

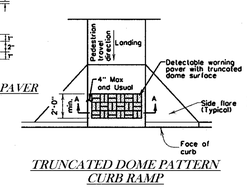
1. CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 4.29 OF THE TEXAS ACCESSIBILITY STANDARDS (TAS). THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
3. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
4. SHADED AREAS ON SHEETS 3 AND 4 INDICATE THE APPROXIMATE LOCATION FOR THE DETECTABLE WARNING SURFACE FOR EACH CURB RAMP TYPE.
5. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
6. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS A MINIMUM OF 6" AND A MAXIMUM OF 10" FROM THE EXTENSION OF THE FACE OF CURB. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
7. ACCEPTABLE PAVER MATERIAL SHALL BE CLAY, VITRIFIED POLYMER COMPOSITE, PRECAST POLYMER CONCRETE, AND CONCRETE.

PEDESTRIAN FACILITES GENERAL NOTES

1. ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
2. LANDINGS SHALL BE A 5' X 5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
3. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4' X 4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
4. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP IS 2%.
5. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP, EITHER BECAUSE THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR BECAUSE THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED. OTHERWISE, PROVIDE FLARED SIDES.
6. ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT RELECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND 16 TAC § 68.102.
7. TO SERVE AS A PEDESTRIAN REFUGE AREA, THE MEDIAN SHOULD BE A MINIMUM OF 5' WIDE. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
8. CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE ENGINEER.
9. EXISTING FEATURES THAT COMPLY WITH TAS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
10. HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER ON ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
11. SEPARATE CURB RAMP AND LANDINGS FROM ADJACENT SIDEWALK AND ANY OTHER ELEMENTS WITH PREMOLD OR BOARD JOINT OF 3/4" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
12. PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
13. FLARE SLOPE SHALL NOT EXCEED 10% MEASURED ALONG CURB LINE.



DETECTABLE WARNING PAVER

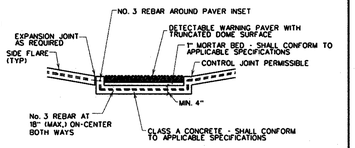


TRUNCATED DOME PATTERN CURB RAMP

GENERAL NOTES (PAVERS)

FURNISH DETECTABLE WARNING PAVER UNITS MEETING ALL REQUIREMENTS OF ASTM C-936, C-33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.

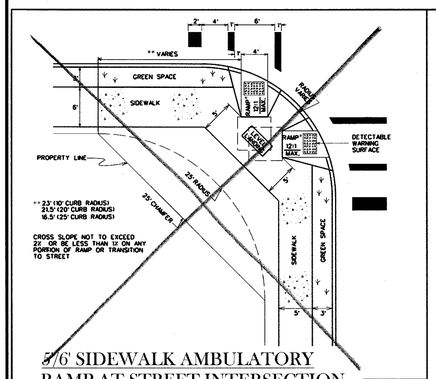
LAY FULL-SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING PAVER UNITS USING A POWER SAW.



SECTION A-A

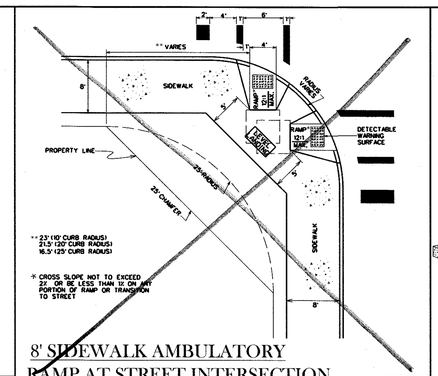
DETECTABLE WARNING PAVER

SW2-03



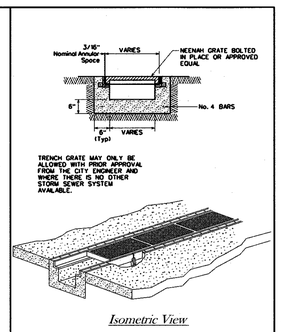
5'/6' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION

SW3-00



8' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION

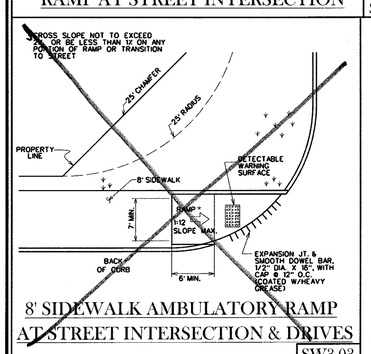
SW3-01



Isometric View

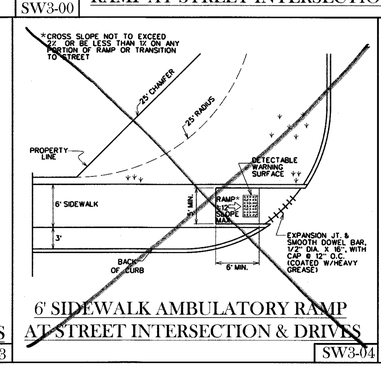
SIDEWALK DRAINAGE TRENCH GRATE

SW3-02



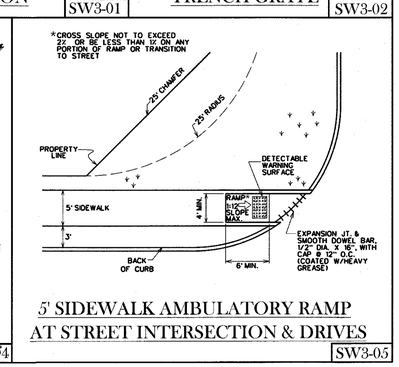
8' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION & DRIVES

SW3-03



6' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION & DRIVES

SW3-04



5' SIDEWALK AMBULATORY RAMP AT STREET INTERSECTION & DRIVES

SW3-05

REVISIONS:

STATE OF TEXAS
JOHN RUSK
87884
LICENSED PROFESSIONAL ENGINEER

7/1/2014

BRYAN - COLLEGE STATION STANDARD SIDEWALK DETAILS

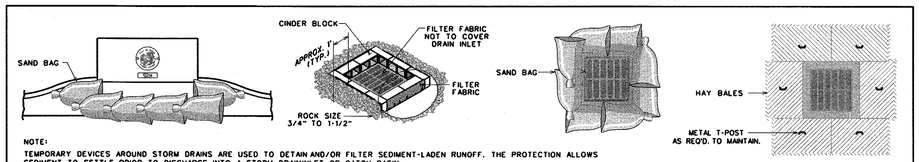
CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.

DRAWN BY:	C.L.M.
DATE:	01-01-09
SCALE:	N T S
APPROVED:	W.P.K.

FIGURE:
SW

SHEET 1 OF 1

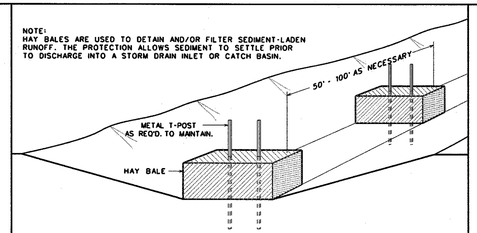


NOTE:
TEMPORARY DEVICES AROUND STORM DRAINS ARE USED TO DETAIN AND/OR FILTER SEDIMENT-LADEN RUNOFF. THE PROTECTION ALLOWS SEDIMENT TO SETTLE PRIOR TO DISCHARGE INTO A STORM DRAININLET OR CATCH BASIN. SAND BAGS SHALL BE UV RESISTANT AND MUST NOT DEGRADE DUE TO ATMOSPHERIC CONDITIONS. SAND BAGS SHALL BE REPLACED UPON FIRST SIGN OF DETERIORATION.

STORM DRAIN INLET PROTECTION

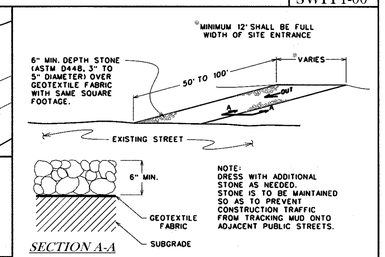
SWPP1-00

NOTE:
HAY BALES ARE USED TO DETAIN AND/OR FILTER SEDIMENT-LADEN RUNOFF. THE PROTECTION ALLOWS SEDIMENT TO SETTLE PRIOR TO DISCHARGE INTO A STORM DRAIN INLET OR CATCH BASIN.



EROSION CONTROL ALONG DITCH

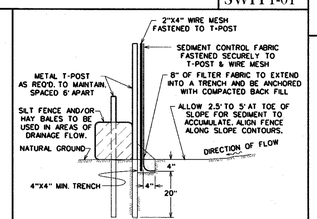
SWPP1-01



NOTE:
DRESS WITH ADDITIONAL STONE AS NEEDED. STONE IS TO BE MAINTAINED SO AS TO PREVENT CONSTRUCTION TRAFFIC FROM TRACKING MUD ONTO ADJACENT PUBLIC STREETS.

CONSTRUCTION EXIT SILT CONTROL

SWPP1-02



SILT FENCE ASSEMBLY

SWPP1-03

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ALL EROSION CONTROL MEASURES SHOULD BE CLEANED OF SILT AFTER EVERY RAIN.

REVISIONS:

STATE OF TEXAS
JOHN RUSK
87884
LICENSED
PROFESSIONAL ENGINEER

JRM
7/1/2019

BRYAN - COLLEGE STATION STANDARD STORM WATER POLLUTION PREVENTION DETAILS

CITY OF COLLEGE STATION

CITY OF BRYAN
The Good Life, Texas Style.

DRAWN BY: C.L.M.
DATE: 01-01-09
SCALE: N T S
APPROVED: W. P. K.

FIGURE:
SWPP

SHEET 1 OF 1