



GENERAL NOTES FOR RETAINING WALLS, FOOTINGS AND RAILING

- RETAINING WALL AND FOOTING DESIGN IS BASED ON RECOMMENDATIONS CONTAINED IN GEOTECHNICAL INVESTIGATION FOR SPECTRUM DRIVE EXTENSION, MORRIS AVENUE TO AIRPORT PARKWAY, ADDISON, TEXAS, PROJECT REPORT NO. 0702-1011, AUGUST 20, 2002, AND ADDITIONAL GEOTECHNICAL RECOMMENDATIONS ON NOVEMBER 20, 2002 (NO. 0702-1011A) AND FEBRUARY 28, 2003 (ADDENDUM #1), PREPARED BY FUGRO SOUTH, INC., PHONE NUMBER (972) 484-8301.
- NOTES HEREIN EXCEPTED FROM THE STANDARD SPECIFICATIONS ARE FOR GENERAL INFORMATION ONLY AND DO NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITIES FOR OBTAINING COPIES OF AND/OR CONFORMING TO THE STANDARD SPECIFICATIONS.
- WRITTEN DIMENSIONS ON THESE DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTRACTOR SHALL COORDINATE, VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS, DETAILS AND CONDITIONS BEFORE STARTING THE WORK.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR SHORING AND BRACING OF ALL WORK INCLUDING PROTECTION OF EXISTING STRUCTURES AND UTILITIES.
- FOOTINGS HAVE BEEN DESIGNED TO BEAR ON TWO (2) FEET OF PROPERTY COMPACTED FILL MATERIAL SIMILAR TO TYPE B FLEXIBLE BASE MATERIAL AS DESCRIBED IN ITEM 247 OF TEXAS DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, UNLESS WEATHERED LIMESTONE IS ENCOUNTERED. DESIGN PARAMETERS INCLUDE A MINIMUM ALLOWABLE BEARING PRESSURE OF 2500 PSF AND A 0.30 FRICTION COEFFICIENT FOR SLIDING. A PASSIVE RESISTANCE OF 180 PCF FOR UNDISTURBED NATIVE SOIL OR COMPACTED FILL AT ONE (1) FOOT BELOW THE BOTTOM OF FOOTING AGAINST THE KEY WAS ALSO USED FOR SLIDING RESISTANCE.
- CANTILEVERED CONCRETE RETAINING WALLS HAVE BEEN DESIGNED TO RETAIN DRAINED GRANULAR BACKFILL WITH AN EQUIVALENT FLUID PRESSURE 50 PSF/FT-DEPTH, WITHOUT HYDROSTATIC PRESSURE. GRAINED BACKFILL SHALL BE PLACED TO A MAXIMUM ANGLE OF (1) VERTICAL TO HORIZONTAL OF 25 DEGREES. GRAINED BACKFILL SHALL BE 25 POUNDS PER CUBIC FOOT WITH AN APPROXIMATE ANGLE OF INTERNAL FRICTION OF 25 DEGREES. A LIVE LOAD VERTICAL SURCHARGE OF 50 PSF WAS APPLIED TO THE SOIL IMMEDIATELY BEHIND WALL.
- BACKFILL SHALL BE A COMPACTED SELECT FILL AS APPROVED BY THE GEOTECHNICAL ENGINEER. UPPER 18 INCHES OF BACKFILL SHALL BE SEALED WITH ON-SITE CLAYS (PI > 25) TO REDUCE SURFACE WATER INFLOWS INTO THE BACKFILL. RELIEVE HYDROSTATIC PRESSURE WITH 1'-FOOT VERTICAL FREE-DRAINING MATERIAL AND PVC DRAIN IMMEDIATELY BEHIND WALL. SLOPE AWAY FROM WALL AT FRONT OF WALL.
- BACKFILL SHALL BE PLACED AS STANDARD COMPACTED EARTH FILL, PLACED IN 8-INCH THICK LOOSE LIFTS AND COMPACTED AT 95% (MINIMUM) OF THE MAXIMUM DRY DENSITY (ASTM D698), CARE SHOULD BE TAKEN TO ASSURE ADEQUATE COMPACTION ADJACENT TO WALL WITH MANUAL COMPACTION EQUIPMENT (NO HEAVY EQUIPMENT). NO VEGETATION OR ROCKS GREATER THAN 3 INCHES IN ANY DIMENSION SHALL BE ALLOWED IN THE FILL.
- SUB-GRADE PREPARATION AND BACKFILL MATERIALS AND COMPACTION SHALL BE UNDER THE SUPERVISION OF THE GEOTECHNICAL FIRM, FUGRO SOUTH, INC. WALL BACKFILL SHOULD BE A CLAYEY SAND OR SANDY CLAY AND SAND MIXTURE WITH LESS THAN 50% PASSING THE NO. 200 SIEVE, A LIQUID LIMIT OF 35 OR LESS, A PLASTICITY INDEX BETWEEN 7 AND 15, AND FREE OF ORGANICS.
- CONCRETE FOR WALLS AND FOOTINGS:
 f_c = 3500 PSI @ 28 DAYS NORMAL WEIGHT
 COARSE AGGREGATE SIZE NO. 57, 1" MAXIMUM
 AIR-ENTRAINMENT 4 1/2 - 5 1/2% BY VOLUME
 WATER-CEMENT RATIO 0.45
 CEMENT CONTENT 560 LBS PER CUBIC YARD MINIMUM
 SLUMP 3" WITH WATER REDUCING ADMIXTURE
- REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60.
- ALL REINFORCING BARS SPLICE SHALL BE 50 BAR DIA. (2'-0") MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
- UNLESS OTHERWISE NOTED, ALL DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES" - A.C.I. 315.

- ALL REINFORCING BAR HOOKS SHOWN ON DRAWINGS SHALL BE A.C.I. STANDARD 90 DEGREE HOOKS, UNLESS OTHERWISE NOTED.
- CONTROL JOINTS (CJ) SHALL BE SPACED AT 20 FEET ON CENTER MAXIMUM. CONSTRUCTION JOINTS SHALL BE USED AT CONTROL JOINT OR EXPANSION JOINT (EJ) LOCATIONS TO TERMINATE EACH CONCRETE PLACEMENT. EXPANSION JOINT SHALL BE LOCATED AS NOTED WITH PLAN. REFER TO DETAILS.
- CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH 3/4" x 45 DEGREE CHAMFER, UNLESS OTHERWISE NOTED.
- EXPANSION JOINT MATERIAL SHALL CONFORM TO ASTM D-1751 FOR NON-EXTRUDING AND RESILIENT BITUMINOUS TYPES.
- TOP OF WALL (TW), FINISH GRADE (FG), BOTTOM OF WALL (BW), AND FINISH SURFACE (FS) ELEVATIONS VARY PER PLANS. REFER TO GRADING PLAN.
- TOP OF FOOTING (TF) SHALL HAVE MINIMUM OF 18" OF COVER BELOW FINISH GRADE.
- CLEAR SPACING BETWEEN REINFORCING BARS SHALL BE A MINIMUM OF 1/2 BAR DIAMETERS, 1/2" OR 1/2 TIMES THE MAXIMUM AGGREGATE SIZE, WHICHEVER IS GREATER.
- REINFORCING SHALL HAVE THE FOLLOWING MINIMUM PROTECTIVE COVER OF CONCRETE, UNLESS OTHERWISE NOTED:
 A) 3" - CONCRETE CAST AGAINST GROUND
 B) 2" - FORMED CONCRETE SURFACES IN CONTACT WITH GROUND
 C) 2" - FORMED CONCRETE SURFACES EXPOSED TO WEATHER
 D) 2" - TOP REINFORCEMENT IN DECK SLABS
- NO OPENINGS FOR PIPES, CONDUIT, ETC. SHALL BE MADE IN CONCRETE WITHOUT THE APPROVAL OF THE STRUCTURAL ENGINEER UNLESS SHOWN ON THE DRAWINGS.
- INTERNATIONAL BUILDING CODE, 2000 EDITION.
- REFER TO GEOTECHNICAL ENGINEER (FUGRO SOUTH, INC.) FOR RECOMMENDED TECHNICAL PROVISIONS FOR THE CONSTRUCTION PRACTICE IN SHORING AND SLOPING OF EXCAVATIONS AND REQUIRED COMPACTION REQUIREMENTS. GEOTECHNICAL ENGINEER SHALL OBSERVE FOOTING SUBGRADE BEFORE CONCRETE PLACEMENT.
- TIME OF OPEN EXCAVATION FOR WALL CONSTRUCTION SHALL BE LIMITED PER GEOTECHNICAL ENGINEER.
- FORM LINER SHALL HAVE A MAXIMUM THICKNESS OF 2 INCHES. REFER TO ARCHITECT/DRAWER FOR FORM LINER PATTERNS AND TEXTURES. REFER TO MANUFACTURER'S GUIDELINES AND SPECIFICATIONS FOR FORMWORK AND INSTALLATION OF FORM LINER PANELS.
- ANY SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO INSTALLATION. SHALL HAVE PREVIOUS APPROVAL FROM THE GOVERNING BUILDING DEPARTMENT AND SHALL HAVE EITHER A CURRENT INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS RESEARCH REPORT OR A NATIONAL EVALUATION REPORT.
- RAIL TUBE SECTIONS SHALL BE IN ACCORDANCE WITH ASTM A500, GRADE B STEEL.
- WHERE INDICATED, GALVANIZING SHALL BE IN ACCORDANCE WITH ASTM A123.
- ALL OPEN ENDS OF THE RAIL SHALL BE CARPED.
- ALL STEEL FOR RAILING SHALL HAVE EPOXY POWDER COAT FINISH OVER RUST INHIBITIVE PRIMER AND BE PAINTED IN SHOP EXCEPT FOR LOCATIONS TO RECEIVE FIELD WELDING. COLOR SHALL BE APPROVED BY THE CITY OF ADDISON PUBLIC WORKS DEPARTMENT.
- ALL FIELD WELD LOCATIONS SHALL BE FINISHED WITH EPOXY POWDER COATING OVER RUST INHIBITIVE PRIMER.

BENCHMARKS:

- "CUT SOUTHWEST CORNER OF CURB AND DRIVE AT INTERSECTION OF SPECTRUM DRIVE AND NORTH OF MORRIS AVENUE. ELEV. 611.84
- "CUT ON CONC. TOP OF CURB DRIVE AT INTERSECTION OF MCENTIRE PLACE. ELEV. 619.30

DATE	DESCRIPTION	REF. NO.
1/05/04	ISSUED FOR CONSTRUCTION	
11/07/03	MOVED MIDDLE WALL SEGMENT EAST 3'	
11/07/03	ISSUED FOR BID	

RETAINING WALL PLAN & NOTES

SPECTRUM DRIVE EXTENSION

TOWN OF ADDISON, TEXAS

315 McKinney Ave., Suite 600, Dallas, TX 75204
 PHONE: (214) 331-3131 FAX: (214) 331-3132

DESIGN	DRAWN	APPR.	SCALE	DATE	PROJECT NO.	NO.
HZI	HZI	CMG	AS SHOWN	NOV 2003	01-3220-01	58

8270171, 32200181, 01-01-10-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-39-40-41-42-43-44-45-46-47-48-49-50-51-52-53-54-55-56-57-58-59-60-61-62-63-64-65-66-67-68-69-70-71-72-73-74-75-76-77-78-79-80-81-82-83-84-85-86-87-88-89-90-91-92-93-94-95-96-97-98-99-100-101-102-103-104-105-106-107-108-109-110-111-112-113-114-115-116-117-118-119-120-121-122-123-124-125-126-127-128-129-130-131-132-133-134-135-136-137-138-139-140-141-142-143-144-145-146-147-148-149-150-151-152-153-154-155-156-157-158-159-160-161-162-163-164-165-166-167-168-169-170-171-172-173-174-175-176-177-178-179-180-181-182-183-184-185-186-187-188-189-190-191-192-193-194-195-196-197-198-199-200-201-202-203-204-205-206-207-208-209-210-211-212-213-214-215-216-217-218-219-220-221-222-223-224-225-226-227-228-229-230-231-232-233-234-235-236-237-238-239-240-241-242-243-244-245-246-247-248-249-250-251-252-253-254-255-256-257-258-259-260-261-262-263-264-265-266-267-268-269-270-271-272-273-274-275-276-277-278-279-280-281-282-283-284-285-286-287-288-289-290-291-292-293-294-295-296-297-298-299-300-301-302-303-304-305-306-307-308-309-310-311-312-313-314-315-316-317-318-319-320-321-322-323-324-325-326-327-328-329-330-331-332-333-334-335-336-337-338-339-340-341-342-343-344-345-346-347-348-349-350-351-352-353-354-355-356-357-358-359-360-361-362-363-364-365-366-367-368-369-370-371-372-373-374-375-376-377-378-379-380-381-382-383-384-385-386-387-388-389-390-391-392-393-394-395-396-397-398-399-400-401-402-403-404-405-406-407-408-409-410-411-412-413-414-415-416-417-418-419-420-421-422-423-424-425-426-427-428-429-430-431-432-433-434-435-436-437-438-439-440-441-442-443-444-445-446-447-448-449-450-451-452-453-454-455-456-457-458-459-460-461-462-463-464-465-466-467-468-469-470-471-472-473-474-475-476-477-478-479-480-481-482-483-484-485-486-487-488-489-490-491-492-493-494-495-496-497-498-499-500-501-502-503-504-505-506-507-508-509-510-511-512-513-514-515-516-517-518-519-520-521-522-523-524-525-526-527-528-529-530-531-532-533-534-535-536-537-538-539-540-541-542-543-544-545-546-547-548-549-550-551-552-553-554-555-556-557-558-559-560-561-562-563-564-565-566-567-568-569-570-571-572-573-574-575-576-577-578-579-580-581-582-583-584-585-586-587-588-589-590-591-592-593-594-595-596-597-598-599-600-601-602-603-604-605-606-607-608-609-610-611-612-613-614-615-616-617-618-619-620-621-622-623-624-625-626-627-628-629-630-631-632-633-634-635-636-637-638-639-640-641-642-643-644-645-646-647-648-649-650-651-652-653-654-655-656-657-658-659-660-661-662-663-664-665-666-667-668-669-670-671-672-673-674-675-676-677-678-679-680-681-682-683-684-685-686-687-688-689-690-691-692-693-694-695-696-697-698-699-700-701-702-703-704-705-706-707-708-709-710-711-712-713-714-715-716-717-718-719-720-721-722-723-724-725-726-727-728-729-730-731-732-733-734-735-736-737-738-739-740-741-742-743-744-745-746-747-748-749-750-751-752-753-754-755-756-757-758-759-760-761-762-763-764-765-766-767-768-769-770-771-772-773-774-775-776-777-778-779-780-781-782-783-784-785-786-787-788-789-790-791-792-793-794-795-796-797-798-799-800-801-802-803-804-805-806-807-808-809-810-811-812-813-814-815-816-817-818-819-820-821-822-823-824-825-826-827-828-829-830-831-832-833-834-835-836-837-838-839-840-841-842-843-844-845-846-847-848-849-850-851-852-853-854-855-856-857-858-859-860-861-862-863-864-865-866-867-868-869-870-871-872-873-874-875-876-877-878-879-880-881-882-883-884-885-886-887-888-889-890-891-892-893-894-895-896-897-898-899-900-901-902-903-904-905-906-907-908-909-910-911-912-913-914-915-916-917-918-919-920-921-922-923-924-925-926-927-928-929-930-931-932-933-934-935-936-937-938-939-940-941-942-943-944-945-946-947-948-949-950-951-952-953-954-955-956-957-958-959-960-961-962-963-964-965-966-967-968-969-970-971-972-973-974-975-976-977-978-979-980-981-982-983-984-985-986-987-988-989-990-991-992-993-994-995-996-997-998-999-1000-1001-1002-1003-1004-1005-1006-1007-1008-1009-1010-1011-1012-1013-1014-1015-1016-1017-1018-1019-1020-1021-1022-1023-1024-1025-1026-1027-1028-1029-1030-1031-1032-1033-1034-1035-1036-1037-1038-1039-1040-1041-1042-1043-1044-1045-1046-1047-1048-1049-1050-1051-1052-1053-1054-1055-1056-1057-1058-1059-1060-1061-1062-1063-1064-1065-1066-1067-1068-1069-1070-1071-1072-1073-1074-1075-1076-1077-1078-1079-1080-1081-1082-1083-1084-1085-1086-1087-1088-1089-1090-1091-1092-1093-1094-1095-1096-1097-1098-1099-1100-1101-1102-1103-1104-1105-1106-1107-1108-1109-1110-1111-1112-1113-1114-1115-1116-1117-1118-1119-1120-1121-1122-1123-1124-1125-1126-1127-1128-1129-1130-1131-1132-1133-1134-1135-1136-1137-1138-1139-1140-1141-1142-1143-1144-1145-1146-1147-1148-1149-1150-1151-1152-1153-1154-1155-1156-1157-1158-1159-1160-1161-1162-1163-1164-1165-1166-1167-1168-1169-1170-1171-1172-1173-1174-1175-1176-1177-1178-1179-1180-1181-1182-1183-1184-1185-1186-1187-1188-1189-1190-1191-1192-1193-1194-1195-1196-1197-1198-1199-1200-1201-1202-1203-1204-1205-1206-1207-1208-1209-1210-1211-1212-1213-1214-1215-1216-1217-1218-1219-1220-1221-1222-1223-1224-1225-1226-1227-1228-1229-1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